Department of Veterans Affairs

CAMP BUTLER NATIONAL CEMETERY

SPRINGFIELD, ILLINOIS

IRRIGATE ENTIRE CEMETERY

PROJECT NUMBER: 806CM3024

JANUARY 28, 2014

FINAL CONSTRUCTION

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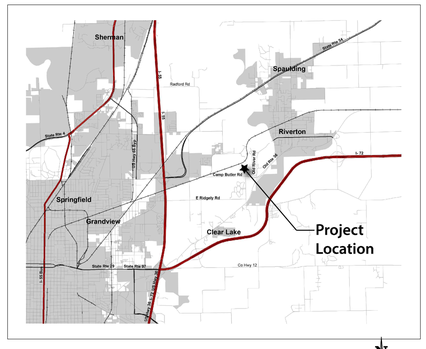
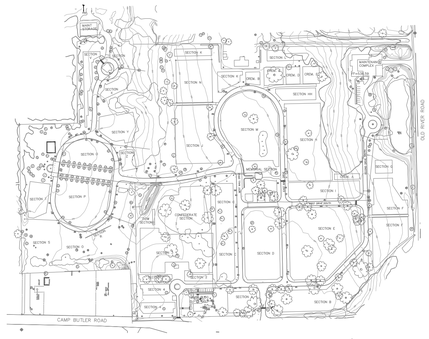


VICINITY MAP
N.T.S.



LOCATION MAP
N.T.S.

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Drawing Title: COVER INDEX SHEET

Approved: Project Director

FINAL CONSTRUCTION

Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY

Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS

Date: 01/28/2014 | Checked: RWB | Drawn: JDL/JHK

Project Number: 806CM3024

Building Number:

Drawing Number: I1.1

Dwg. 1 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

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VA FORM 08-6231

GENERAL DESCRIPTION

A FULLY AUTOMATED SPRINKLER IRRIGATION SYSTEM WILL IRRIGATE EXISTING BURIAL SECTIONS AND LANDSCAPED AREAS. ROTARY AND SPRAY SPRINKLERS WILL BE USED.

THE EXISTING 2–INCH WATER METER FOR THE ADMINISTRATION BUILDING AND EXISTING FLOWER WATER HYDRANTS WILL NOT BE DISTURBED UNDER THIS CONTRACT. POTABLE WATER WILL BE USED FOR IRRIGATION. AN EXISTING 6–INCH DUCTILE IRON MAIN THAT SUPPLIES WATER TO AN EXISTING FIRE HYDRANT WILL BE TAPPED AND A WATER METER INSTALLED. DOWNSTREAM OF THE METER A BACKFLOW PREVENTER AND BOOSTER PUMP WILL BE INSTALLED. THE BOOSTER PUMP IS REQUIRED TO PROVIDE SUFFICIENT WATER PRESSURE TO THE IRRIGATION SYSTEM. NEW ELECTRICAL SERVICE TO ALSO BE INSTALLED TO SERVICE IRRIGATION SYSTEM. A COMMUNICATION CABLE WILL BE CONNECTED TO THE BOOSTER PUMP AND ROUTED TO THE CENTRAL COMPUTER FOR PUMP MONITORING FROM THE CENTRAL COMPUTER.

PROGRAMMABLE STAND ALONE CONTROLLERS CAPABLE OF USING CLOUD TECHNOLOGY IN THE FUTURE WILL ALLOW REMOTE ACCESS CAPABILITY VIA SPREAD SPECTRUM RADIO AND WILL BE INSTALLED AT THE APPROXIMATE LOCATION INDICATED ON PLANS. RAIN, FREEZE AND WIND SENSORS WILL BE INSTALLED.

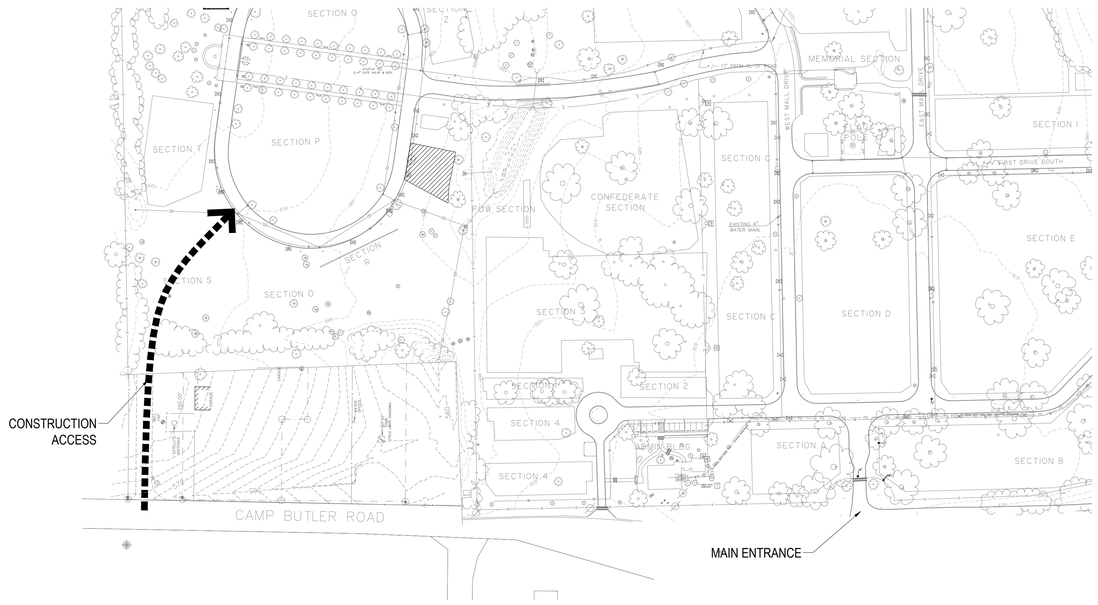
ISOLATION GATE VALVES WILL BE INSTALLED TO PERMIT THE ISOLATION OF SECTIONS OF THE SYSTEM FOR REPAIRS OR MAINTENANCE. NEW QUICK COUPLING VALVES WILL BE INSTALLED ON MAINLINE DEAD ENDS AND AT SELECT LOCATIONS.

GENERAL NOTES

1. THE SYSTEM DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 47 PSI AT A MINIMUM DISCHARGE OF 600 GPM AT THE PUMP STATION. THE PUMP MUST PROVIDE 43 PSI BOOST (MINIMUM) TO ACHIEVE A 90 PSI DISCHARGE PRESSURE.
2. READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION. CONFIRM EXACT LIMITS OF IRRIGATED AREA AND ALL EXISTING AND FUTURE HARDSCAPE AND BURIAL AREAS PRIOR TO CONSTRUCTION.
3. COORDINATE UTILITY LOCATES ("CALL BEFORE YOU DIG") OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR RESPONSIBLE FOR LOCATING AND VERIFYING ALL UNDERGROUND UTILITIES AND CONDITIONS BEFORE EXCAVATING. LOCATIONS OF EXISTING WATER UTILITIES SHOWN ON DRAWINGS HAVE NOT BEEN FIELD VERIFIED.
4. DO NOT PROCEED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING, OR IF DISCREPANCIES IN CONSTRUCTION DETAILS, LEGEND, NOTES, OR SPECIFICATIONS ARE DISCOVERED. BRING ALL SUCH OBSTRUCTIONS OR DISCREPANCIES TO THE ATTENTION OF THE COR.
5. THE DRAWINGS ARE DIAGRAMMATIC. THEREFORE, THE FOLLOWING SHOULD BE NOTED:
   A. IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE PLANTING AREAS FOR CLARITY.
   B. AVOID CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING MATERIALS, AND ARCHITECTURAL FEATURES.
   C. INSTALL IRRIGATION PIPE AND WIRING IN LANDSCAPED AREAS WHENEVER POSSIBLE.
6. SELECT NOZZLES FOR ROTARY SPRINKLERS WHICH PROVIDE COMPLETE AND ADEQUATE COVERAGE IF SITE CONDITIONS ARE NOT AS SHOWN. CAREFULLY ADJUST THE RADIUS OF THROW AND ARC OF EACH ROTARY SPRINKLER TO PROVIDE THE BEST PERFORMANCE AND MINIMIZE OVERSPRAY.
7. INSTALL ALL ELECTRICAL POWER TO THE IRRIGATION CONTROL SYSTEM IN ACCORDANCE WITH THE LATEST 2011 NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL ELECTRIC UTILITY CODES AND AS PER DEPARTMENT OF VETERANS AFFAIRS SPECIFICATIONS.
8. WITH REGARD TO PIPE SIZING, THE FOLLOWING SHOULD BE NOTED:
   IF A SECTION OF UNSIZED PIPE IS LOCATED BETWEEN TWO IDENTICALLY SIZED SECTIONS, THE UNSIZED PIPE IS THE SAME NOMINAL SIZE AS THE TWO SIZED SECTIONS. THE UNSIZED PIPE SHOULD NOT BE CONFUSED WITH THE DEFAULT PIPE SIZE NOTED IN THE LEGEND.
9. CONTRACTOR MUST SUPPLY A SYSTEM THAT PROVIDES FULL COVERAGE TO EACH SECTION. IF ADDITIONAL SPRINKLERS ARE NEEDED, THEY ARE TO BE PROVIDED AT NO ADDITIONAL COST TO THE GOVERNMENT.
10. PROVIDE THE FOLLOWING COMPONENTS TO THE OWNER PRIOR TO THE COMPLETION OF THE PROJECT:
    A. TWO OPERATING KEYS FOR EACH TYPE OF MANUALLY OPERATED VALVE.
    B. TWO OF EACH SERVICING WRENCH OR TOOL NEEDED FOR COMPLETE ACCESS, ADJUSTMENT, AND REPAIR OF ALL ROTARY SPRINKLERS.
    C. TEN OF EACH TYPE OF SPRINKLER HEAD ASSEMBLY AS SHOWN ON THE DRAWINGS.
    D. FOUR QUICK COUPLING KEYS, EACH WITH ATTACHED SWIVEL HOSE ELL FOR OPERATION OF THE QUICK COUPLING VALVES SHOWN ON THE DRAWINGS.
11. AT NO TIME SHALL SOIL BE ALLOWED TO PILE ON OR AROUND THE THE GRAVESITES AND HEADSTONES, USE A TARP WHEN EXCAVATING TRENCHES AND TRENCHES IN BURIAL AREAS MAY NOT BE OPEN LONGER THAN 24 HOURS. BACKFILL MATERIAL SPOILS NOT ALLOWED TO REMAIN IN BURIAL SECTIONS AFTER BACKFILL IS COMPLETE. SOD TO BE INSTALLED OVER ALL TRENCHES WITHIN 4 DAYS OF TRENCH BACKFILL.
12. REFER TO SHEET I1.7 FOR PHASING PLAN.
13. EROSION CONTROL SHALL BE INSTALLED ALONG ANY LOCATIONS DOWNHILL OF OPEN TRENCHING AND FOR ALL STORM DRAIN INLETS AND BASINS WITHIN 100–FEET OF EACH PHASED AREA THAT IS UNDER CONSTRUCTION. ONCE SOD IS PLACED TO RESTORE TRENCHES EROSION CONTROL MAY BE REMOVED.
14. CONTRACTOR MUST REPAIR ALL DAMAGES CAUSED BY THIS CONSTRUCTION PROCESS AND RESTORE BACK TO CONDITION ACCEPTED WITH SATISFACTION OF OWNER AT THE CONTRACTOR'S EXPENSE.
15. REFER TO PLANTING IRRIGATION SPECIFICATION 32 84 00, 3.3, C FOR IRRIGATION PIPE BURIAL DEPTHS.

CONSTRUCTION ACCESS

1. REMOVE AND REPLACE EXISTING CURB AND PAVEMENT DAMAGED DUE TO CONSTRUCTION ACCESS TO SITE, AS DIRECTED BY COR. REMOVAL/REPLACEMENT SHALL EXTEND TO EXISTING CONTROL JOINTS.
2. CONTRACTOR SHALL RESTORE THE CONSTRUCTION ACCESS TO ORIGINAL CONDITION UPON COMPLETION OF PROJECT. RESTORATION SHALL INCLUDE, BUT NOT LIMITED TO, FULL EXCAVATION OF ROADWAY (I.E. GRAVEL, FABRIC, ETC.) BACKFILL TO ORIGINAL GRADE, FINE GRADE, SOD DISTURBED LAWN AREAS.



LEGEND

- EXISTING POTABLE WATER LINE
  *SIZE: 6–INCH
  *PURVEYOR: SUGAR CREEK WATER DISTRICT, DON CARVER 217.523.1895
- EXISTING WATER MAIN TO POTABLE HYDRANTS
  *4–INCH PVC
- SLEEVING – FOR LATERAL PIPE ONLY SHEETS I1.3 THRU I1.7
  *TYPE: CLASS 200 PVC OR C900 PVC
  *SIZE PER SPECIFICATIONS
- MAINLINE PIPE
  *TYPE: HDPE DR11
  *SIZE: PER PLANS
- LATERAL PIPE TO SPRINKLERS
  *TYPE: CLASS 160 PVC
  *SIZE: 1–INCH UNLESS OTHERWISE INDICATED
- HAND DUG LATERAL AND MAINLINE PIPE
- UNCONNECTED PIPE CROSSING
- POINT–OF–CONNECTION (P.O.C.)
- TAP AND WATER METER ASSEMBLY
  *PER SUGAR CREEK WATER DISTRICT STANDARDS
- BACKFLOW PREVENTER/BOOSTER PUMP ASSEMBLY
  *REFER TO DETAIL
- WINTERIZATION ASSEMBLY
  *REFER TO DETAIL
- ISOLATION GATE VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
  *SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE
- QUICK COUPLING VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
- AIR VACUUM RELIEF VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
- REMOTE CONTROL VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
  *SIZE: AS INDICATED ON PLANS
  *ANGLE VALVE: REFER TO SPECIFICATIONS
  *SOLENIOD: REFER TO SPECIFICATIONS
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 5 FEET
  FLOW (GPM): Q – 0.10 H – 0.20 F – 0.41
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 8 FEET
  FLOW (GPM): Q – 0.26 H – 0.52 F – 1.05
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 10 FEET
  FLOW (GPM): Q – 0.39 H – 0.79 F – 1.58
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 12 FEET
  FLOW (GPM): Q – 0.65 H – 1.30 F – 2.60
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 15 FEET
  FLOW (GPM): Q – 0.92 H – 1.85 F – 3.70
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 30 FEET
  FLOW (GPM): 1.21
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 15 FEET
  FLOW (GPM): 0.61
- POP–UP ROTOR SPRINKLER: 70 PSI
  *MODEL: REFER TO SPECIFICATIONS
  *SYMBOL WITH HALO AROUND IT IS FULL CIRCLE, SYMBOL WITHOUT IS PART CIRCLE

20 – HALO = FULL CIRCLE ROTOR; NOZZLE NUMBER
20 – NO HALO = PART CIRCLE ROTOR; NOZZLE NUMBER

NOZZLES USED:

NOZZLE: 2.0	RADIUS: 39'	FLOW: 2.1 GPM
NOZZLE: 4.0	RADIUS: 39'	FLOW: 4.7 GPM
NOZZLE: 6.0	RADIUS: 45'	FLOW: 6.7 GPM
NOZZLE: 10.0	RADIUS: 55'	FLOW: 11.1 GPM
NOZZLE: 20.0	RADIUS: 71'	FLOW: 22 GPM

N229 – HEADSTONE IDENTIFIER
NM – QUADRANT
20 – ROTOR SPRINKLER

- IRRIGATION CONTROLLER ASSEMBLY: REFER TO SPECIFICATIONS
  CONTROLLER "1": 48 STATIONS, 44 STATIONS USED
  CONTROLLER "2": 48 STATIONS, 36 STATIONS USED
  CONTROLLER "3": 48 STATIONS, 22 STATIONS USED
  CONTROLLER "4": 48 STATIONS, 35 STATIONS USED
- WEATHER SENSORS:
  *MODEL: REFER TO SPECIFICATIONS

95 – INDICATES CONTROLLER STATION NUMBER
8 – INDICATES LATERAL DISCHARGE IN GPM
1" – INDICATES REMOTE CONTROL VALVE SIZE IN INCHES

VALVE BOXES
*MODEL: REFER TO SPECIFICATIONS.
*LID COLOR: REFER TO SPECIFICATIONS.

SURVEY LEGEND

FOUND PROPERTY CORNERS	TELEPHONE COMMUNICATIONS BOX	BOLLARD	TRANSMISSION POLE
BORE HOLE	WATER VAULT	FIRE HYDRANT	DECIDUOUS TREE
POWER POLE	WATER VALVE	FENCE	STORM DRAIN
ELECTRIC BOX	YARD HYDRANT	TREE LINE	POLE
GAS METER	WATER METER	APPROXIMATE UNDER GROUND STORM DRAIN	FLAG POLE
SEPTIC SEWER LID	PARKING BARRIER	APPROXIMATE UNDER GROUND WATER LINE	SINGLE POST SIGN
GRATE INLET	WATER ELEVATION	APPROXIMATE UNDER FIBER OPTIC LINE	EVERGREEN TREE
STORM DRAIN MANHOLE	UTILITY POLE	EDGE OF WATER	ROUND LIGHT POLE

FLAG NOTES

1. INSTALL IRRIGATION CONTROLLER AT THE APPROXIMATE LOCATION INDICATED. COORDINATE EXACT PLACEMENT OF THE CONTROLLER WITH THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) ON SITE PRIOR TO CONSTRUCTION. REFER TO THE IRRIGATION CONTROLLER ASSEMBLY DETAIL FOR ADDITIONAL INFORMATION.
2. PROVIDE AND INSTALL 4–INCH SLEEVE AT EACH HARDSCAPE CROSSING INTENDED FOR IRRIGATION WIRE ROUTING. EMPLOY HORIZONTAL BORING TECHNIQUES TO INSTALL SLEEVE UNDERNEATH HARDSCAPE. TERMINATE SLEEVE ENDS 12–INCHES BEYOND THE EDGE OF PAVEMENT. COVER SLEEVE ENDS AND MARK WITH TEMPORARY STAKES. REFER TO IRRIGATION SPECIFICATIONS FOR PIPE MATERIAL.
3. AIR VACUUM RELIEF VALVE ASSEMBLY LOCATION SHOWN IS APPROXIMATE. VERIFY THE LOCATION OF THE HIGHEST ELEVATION ON THE MAINLINE AND INSTALL THE AIR VACUUM RELIEF VALVE ASSEMBLY AT THE HIGH POINT IN THIS AREA.
4. ROUTE IRRIGATION MAINLINE PIPE 2–FEET FROM THE EDGE OF PAVEMENT IN TREE LAWN AREAS. INSTALL VALVE BOXES AT LEAST 2–FEET FROM THE EDGE OF PAVEMENT AND MAINTAIN A UNIFORM DISTANCE FROM THE VALVE BOX TO THE EDGE OF PAVEMENT.
5. PROVIDE AND INSTALL SEPARATE COMMUNICATION CABLE FROM MAINTENANCE BUILDING TO BOOSTER PUMP. THE TWO WIRE TWISTED PAIR CABLE WILL BE USED IN THE FUTURE TO REMOTE MONITOR THE BOOSTER PUMP FLOW AND ALARMS. ROUTE CABLE WITH NEW MAINLINE WHERE POSSIBLE. ROUTE CABLE NOT ROUTED WITH NEW MAINLINE PIPE OR OTHER IRRIGATION SYSTEM WIRING IN 1–1/2–INCH CONDUIT. TERMINATE CABLE IN 10–FOOT LOOP INSIDE THE BUILDING WHERE DIRECTED BY CEMETERY STAFF. CORE DRILL AND SEAL THE WALL PENETRATION.
6. REFER TO DETAIL 2 SHEET I1.9 FOR ADDITIONAL INFORMATION ON SPRINKLER PLACEMENT IN BURIAL AREAS.
7. SPRINKLERS ARE SHOWN ON PLANS INTENDED FOR EXISTING SMALL TURF AND SHRUB BED AREAS. FIELD ADJUST SPRINKLER LAYOUT FOR COMPLETE COVERAGE OF THESE EXISTING AREAS. EXISTING CONDITIONS ARE NOT COMPLETELY DOCUMENTED AND MAY REQUIRE REVISED LAYOUT AND NUMBER OF SPRINKLERS AROUND THE COMMITTAL SHELTERS, ENTRY WALLS, AND OTHER AREAS WHERE POP–UP ROTOR SPRINKLERS ARE USED. DO NOT INSTALL LARGE RADIUS ROTOR SPRINKLERS IN SHRUB BEDS. SHRUB BEDS AND TURF AREAS TO BE ON SEPARATE ZONES. 10 SPARE SPRAY AND 10 SPARE ROTOR SPRINKLERS TO BE PROVIDED TO CEMETERY AS SPARE PARTS.
8. IRRIGATION MAINLINE SHOWN PARALLELS A PVC 4–INCH POTABLE MAINLINE BURIED AT AN UNKNOWN DEPTH. WHEN EXCAVATING EXISTING IRRIGATION PIPE OR INSTALLING NEW IRRIGATION PIPE CARE SHOULD BE TAKEN TO PROTECT THE EXISTING POTABLE PIPE. CONTRACTOR IS RESPONSIBLE FOR DAMAGE DURING IRRIGATION CONSTRUCTION AND WILL REPAIR OR REPLACE DAMAGED POTABLE MAINLINE VALVES AND PIPING.
9. INSTALL TWO (2) 2–INCH HDPE DR11 SLEEVES INTENDED FOR POWER WIRE AND COMMUNICATION CABLE ROUTING. THE POWER WIRING IS TO BE INSTALLED WITHIN SEPARATE SLEEVE (SEE E1.2, E1.3 AND SPECIFICATIONS FOR CONDUIT AND SLEEVE REQUIREMENTS). THE COMMUNICATION CABLE TO BE INSTALLED WITHIN SEPARATE SLEEVE. REFER TO ELECTRICAL PLANS FOR ADDITIONAL INFORMATION REGARDING POWER WIRING.
10. EXCAVATE AND EXPOSE EXISTING 6–INCH POTABLE WATER LINE (SUGAR CREEK WATER DISTRICT) IN APPROXIMATE LOCATION SHOWN. INSTALL 6–INCH TAP INTO WATER LINE AND EXTEND NEW 6–INCH DUCTILE IRON SERVICE LINE TO WATER METER. REFER TO TAP AND WATER METER DETAIL ON SHEET I1.8 FOR ADDITIONAL INFORMATION.
11. INSTALL BOOSTER PUMP ASSEMBLY IN APPROXIMATE LOCATION SHOWN. COORDINATE ELECTRICAL CONNECTION TO BOOSTER PUMP WITH ELECTRICAL CONTRACTOR. CONNECT POWER TO BOOSTER PUMP VARIABLE FREQUENCY DRIVE (REGENERATIVE TYPE) PER MANUFACTURER'S GUIDELINES.
12. INDICATED BOUNDARY INTENDED FOR CONTRACTOR STAGING AREA. STORE AND SECURE EQUIPMENT AND MATERIALS WITHIN INDICATED AREA. FENCE STAGING AREA PER SPECIFICATIONS. COORDINATE WITH CONTRACTING OFFICER'S REPRESENTATIVE IF ADDITIONAL STAGING AREA IS REQUIRED.
13. ELECTRICAL EQUIPMENT TO BE INSTALLED IN APPROXIMATE LOCATION. REFER TO ELECTRICAL DRAWINGS E1.1, E1.2 AND E1.3 FOR EQUIPMENT LOCATIONS AND ADDITIONAL INFORMATION.
14. INDICATED ISOLATION GATE VALVE TO ACT AS THE GRAVITY DRAIN. INSTALL GATE VALVE IN APPROXIMATE LOCATION AND EXTEND HDPE PIPE DOWNSTREAM OF GATE VALVE TO POND. DAYLIGHT PIPE WITHIN 3–FEET OF WATER LEVEL ELEVATION. ARMOR DISCHARGE WITH RIP RAP TO MINIMIZE EROSION DURING MANUAL DRAINING ACTIVITIES.
15. REPAIR GRAVEL PATHWAYS AFTER TRENCHING TO MEET OR EXCEED ORIGINAL CONDITIONS. DOCUMENT EXISTING CONDITION OF PATHWAYS PRIOR TO PIPING INSTALLATION.
16. DISCONNECT EXISTING COLUMBARIUM IRRIGATION WATER SOURCE AND CONNECT TO NEW IRRIGATION MAINLINE. ROUTE NEW MAINLINE PIPE AS NECESSARY FROM INDICATED STUB OUT TO EXISTING IRRIGATION SYSTEM. CONNECT TO EXISTING IRRIGATION SYSTEM USING NECESSARY FITTINGS. CONNECT ALL EXISTING COLUMBARIUM REMOTE CONTROL VALVES TO NEW IRRIGATION WIRING AND ROUTE TO NECESSARY IRRIGATION CONTROLLER. THE EXISTING COLUMBARIUM IRRIGATION SYSTEM EQUIPMENT AND PIPING LOCATIONS ARE NOT KNOWN. FIELD VERIFY LOCATIONS PRIOR TO CONDUCTING CONNECTION TO NEW IRRIGATION SYSTEM.
17. INSTALL WEATHER SENSORS ON CONTROLLER PEDESTAL LOCATION SHOWN PER MANUFACTURER'S GUIDELINES. COORDINATE EXACT LOCATION ON SITE WITH CEMETERY STAFF. WIRE COMMON INTERRUPT SHUTDOWN TO THE NORMALLY OPEN MASTER VALVE IN THE CONTROLLER.
18. APPROXIMATE LIMITS OF EXISTING COLUMBARIUM. ADJUST SPRINKLER LAYOUT AS NECESSARY IN THE FIELD TO PROVIDE HEAD–TO–HEAD COVERAGE AROUND COLUMBARIUM WHILE MINIMIZING OVERSPRAY ONTO HARDSCAPED AREAS.
19. INSTALL THREE CONTROL WIRES AND ONE COMMON WIRE FROM THE RESPECTIVE CONTROLLER TO EACH OF THE REMOTE CONTROL VALVE ASSEMBLIES INDICATED FOR USE AS SPARE WIRE IN CASE OF CONTROL WIRE FAILURE. PROVIDE A 3–FOOT COILED LENGTH OF EACH SPARE WIRE IN ALL REMOTE CONTROL VALVE BOXES. ROUTE SPARE WIRE IN SUCH A MANNER THAT WIRE IS ROUTED WITH ALL MAINLINE PIPES.

FINAL CONSTRUCTION

Revisions	Date

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Drawing Title: IRRIGATION NOTES AND LEGEND
Approved Project Director:
Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY
Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS
Date: 01/28/2014 Checked: RWB Drawn: JDL/JHK
Project Number: 806CM3024
Building Number:
Drawing Number: I1.2
Dwg. 2 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE
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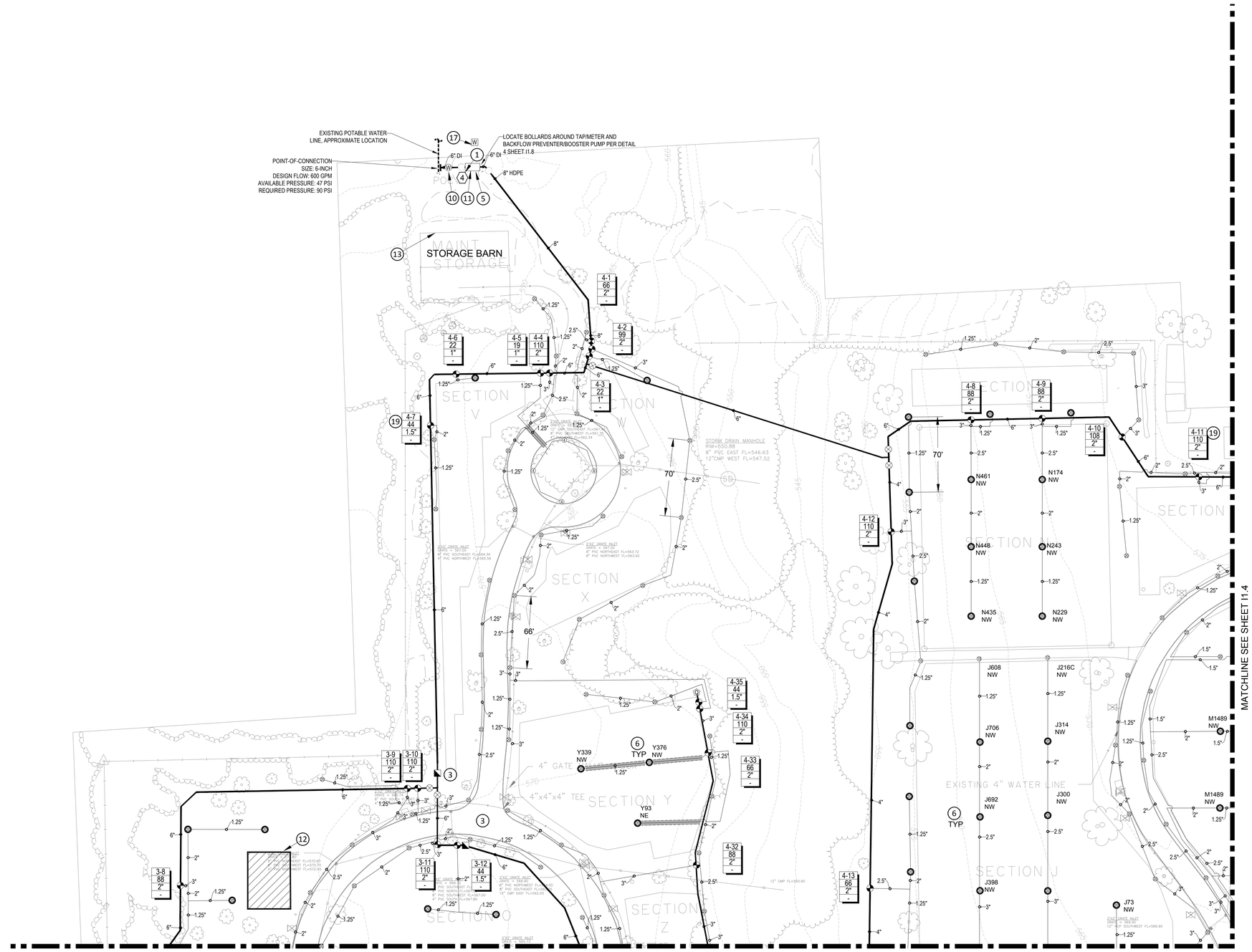

(#) SEE FLAG NOTES SHEET I1.2

N E S W

40' 0' 20' 40' 80'
1" = 40'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

LEGEND

- EXISTING POTABLE WATER LINE
  *SIZE: 6-INCH
  *PURVEYOR: SUGAR CREEK WATER DISTRICT, DON CARVER 217.523.1895
- EXISTING WATER MAIN TO POTABLE HYDRANTS
  *4-INCH PVC
- SLEEVING – FOR LATERAL PIPE ONLY SHEETS I1.3 THRU I1.7
  *TYPE: CLASS 200 PVC OR C900 PVC
  *SIZE PER SPECIFICATIONS
- MAINLINE PIPE
  *TYPE: HDPE DR11
  *SIZE: PER PLANS
- LATERAL PIPE TO SPRINKLERS
  *TYPE: CLASS 160 PVC
  *SIZE: 1-INCH UNLESS OTHERWISE INDICATED
- HAND DUG LATERAL AND MAINLINE PIPE
- UNCONNECTED PIPE CROSSING
- POINT-OF-CONNECTION (P.O.C.)
- TAP AND WATER METER ASSEMBLY
  *PER SUGAR CREEK WATER DISTRICT STANDARDS
- BACKFLOW PREVENTER/BOOSTER PUMP ASSEMBLY
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- ISOLATION GATE VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
  *SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE
- QUICK COUPLING VALVE ASSEMBLY
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- AIR VACUUM RELIEF VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
- REMOTE CONTROL VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
  *SIZE: AS INDICATED ON PLANS
  *ANGLE VALVE: REFER TO SPECIFICATIONS
  *SOLENIOD: REFER TO SPECIFICATIONS
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 5 FEET
  FLOW (GPM): Q – 0.10 H – 0.20 F – 0.41
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 8 FEET
  FLOW (GPM): Q – 0.26 H – 0.52 F – 1.05
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 10 FEET
  FLOW (GPM): Q – 0.39 H – 0.79 F – 1.58
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 12 FEET
  FLOW (GPM): Q – 0.65 H – 1.30 F – 2.60
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 15 FEET
  FLOW (GPM): Q – 0.92 H – 1.85 F – 3.70
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 30 FEET
  FLOW (GPM): 1.21
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 15 FEET
  FLOW (GPM): 0.61
- POP-UP ROTOR SPRINKLER: 70 PSI
  *MODEL: REFER TO SPECIFICATIONS
  *SYMBOL WITH HALO AROUND IT IS FULL CIRCLE, SYMBOL WITHOUT IS PART CIRCLE

(20) HALO = FULL CIRCLE ROTOR, NOZZLE NUMBER — 20 NO HALO = PART CIRCLE ROTOR, NOZZLE NUMBER

NOZZLES USED:

NOZZLE: 2.0	RADIUS: 39'	FLOW: 2.1 GPM
NOZZLE: 4.0	RADIUS: 39'	FLOW: 4.7 GPM
NOZZLE: 6.0	RADIUS: 45'	FLOW: 6.7 GPM
NOZZLE: 10.0	RADIUS: 55'	FLOW: 11.1 GPM
NOZZLE: 20.0	RADIUS: 71'	FLOW: 22 GPM

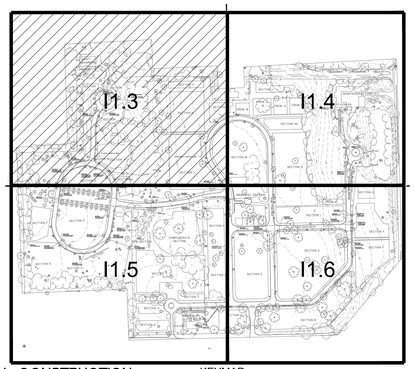
(20) N229 NW — HEADSTONE IDENTIFIER, QUADRANT, ROTOR SPRINKLER

(1)(2)(3)(4) IRRIGATION CONTROLLER ASSEMBLY: REFER TO SPECIFICATIONS
CONTROLLER "1": 48 STATIONS, 44 STATIONS USED
CONTROLLER "2": 48 STATIONS, 36 STATIONS USED
CONTROLLER "3": 48 STATIONS, 22 STATIONS USED
CONTROLLER "4": 48 STATIONS, 35 STATIONS USED

(W) WEATHER SENSORS:
*MODEL: REFER TO SPECIFICATIONS

66 — INDICATES CONTROLLER STATION NUMBER
8 — INDICATES LATERAL DISCHARGE IN GPM
1" — INDICATES REMOTE CONTROL VALVE SIZE IN INCHES

VALVE BOXES
*MODEL: REFER TO SPECIFICATIONS.
*LID COLOR: REFER TO SPECIFICATIONS.



KEYMAP N.T.S.

FINAL CONSTRUCTION

FINAL CONSTRUCTION

Revisions:	Date

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JOHN D. LEONARD Certified Irrigation Designer CID IRRIGATION ASSOCIATION 46102

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Drawing Title: IRRIGATION PLAN

Approved Project Director:

Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY

Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS

Date: 01/28/2014 | Checked: RWB | Drawn: JDL/JHK

Project Number: 806CM3024

Building Number:

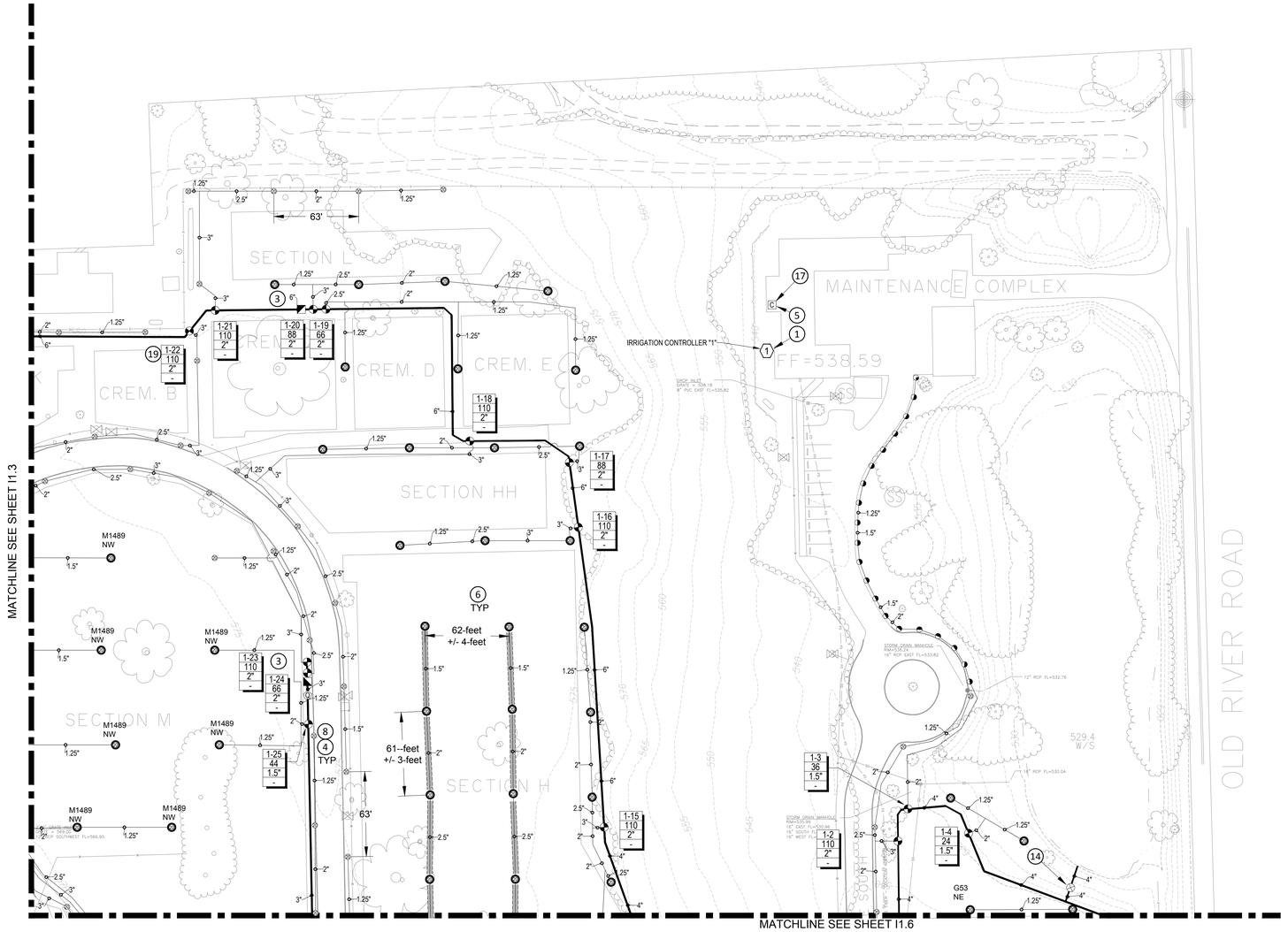
Drawing Number: I1.3

Dwg. 3 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

VA FORM 08-6231



(#) SEE FLAG NOTES SHEET I1.2

N W E S

40' 0' 20' 40' 80'

1" = 40'

SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

LEGEND

- EXISTING POTABLE WATER LINE
  *SIZE: 6–INCH
  *PURVEYOR: SUGAR CREEK WATER DISTRICT, DON CARVER 217.523.1895
- EXISTING WATER MAIN TO POTABLE HYDRANTS
  *4–INCH PVC
- SLEEVING – FOR LATERAL PIPE ONLY SHEETS I1.3 THRU I1.7
  *TYPE: CLASS 200 PVC OR C900 PVC
  *SIZE PER SPECIFICATIONS
- MAINLINE PIPE
  *TYPE: HDPE DR11
  *SIZE: PER PLANS
- LATERAL PIPE TO SPRINKLERS
  *TYPE: CLASS 160 PVC
  *SIZE: 1–INCH UNLESS OTHERWISE INDICATED
- HAND DUG LATERAL AND MAINLINE PIPE
- UNCONNECTED PIPE CROSSING
- POINT–OF–CONNECTION (P.O.C.)
- TAP AND WATER METER ASSEMBLY
  *PER SUGAR CREEK WATER DISTRICT STANDARDS
- BACKFLOW PREVENTER/BOOSTER PUMP ASSEMBLY
  *REFER TO DETAIL
- WINTERIZATION ASSEMBLY
  *REFER TO DETAIL
- ISOLATION GATE VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
  *SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE
- QUICK COUPLING VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
- AIR VACUUM RELIEF VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
- REMOTE CONTROL VALVE ASSEMBLY
  *MODEL: REFER TO SPECIFICATIONS
  *SIZE: AS INDICATED ON PLANS
  *ANGLE VALVE: REFER TO SPECIFICATIONS
  *SOLENIOD: REFER TO SPECIFICATIONS
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 5 FEET
  FLOW (GPM): Q – 0.10 H – 0.20 F – 0.41
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 8 FEET
  FLOW (GPM): Q – 0.26 H – 0.52 F – 1.05
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 10 FEET
  FLOW (GPM): Q – 0.39 H – 0.79 F – 1.58
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 12 FEET
  FLOW (GPM): Q – 0.65 H – 1.30 F – 2.60
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 15 FEET
  FLOW (GPM): Q – 0.92 H – 1.85 F – 3.70
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 30 FEET
  FLOW (GPM): 1.21
- POP–UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 15 FEET
  FLOW (GPM): 0.61
- POP–UP ROTOR SPRINKLER: 70 PSI
  *MODEL: REFER TO SPECIFICATIONS
  *SYMBOL WITH HALO AROUND IT IS FULL CIRCLE, SYMBOL WITHOUT IS PART CIRCLE

20 — HALO = FULL CIRCLE ROTOR; NO HALO = PART CIRCLE ROTOR; NOZZLE NUMBER

NOZZLES USED:

NOZZLE: 2.0	RADIUS: 39'	FLOW: 2.1 GPM
NOZZLE: 4.0	RADIUS: 39'	FLOW: 4.7 GPM
NOZZLE: 6.0	RADIUS: 45'	FLOW: 6.7 GPM
NOZZLE: 10.0	RADIUS: 55'	FLOW: 11.1 GPM
NOZZLE: 20.0	RADIUS: 71'	FLOW: 22 GPM

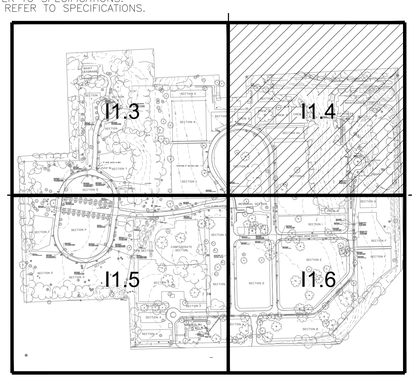
N229 NW — HEADSTONE IDENTIFIER; QUADRANT; ROTOR SPRINKLER

1 2 3 4 — IRRIGATION CONTROLLER ASSEMBLY: REFER TO SPECIFICATIONS
CONTROLLER "1": 48 STATIONS, 44 STATIONS USED
CONTROLLER "2": 48 STATIONS, 36 STATIONS USED
CONTROLLER "3": 48 STATIONS, 22 STATIONS USED
CONTROLLER "4": 48 STATIONS, 35 STATIONS USED

W — WEATHER SENSORS:
*MODEL: REFER TO SPECIFICATIONS

96 / 8 / 1" — INDICATES CONTROLLER STATION NUMBER; INDICATES LATERAL DISCHARGE IN GPM; INDICATES REMOTE CONTROL VALVE SIZE IN INCHES

VALVE BOXES
*MODEL: REFER TO SPECIFICATIONS.
*LID COLOR: REFER TO SPECIFICATIONS.



KEYMAP
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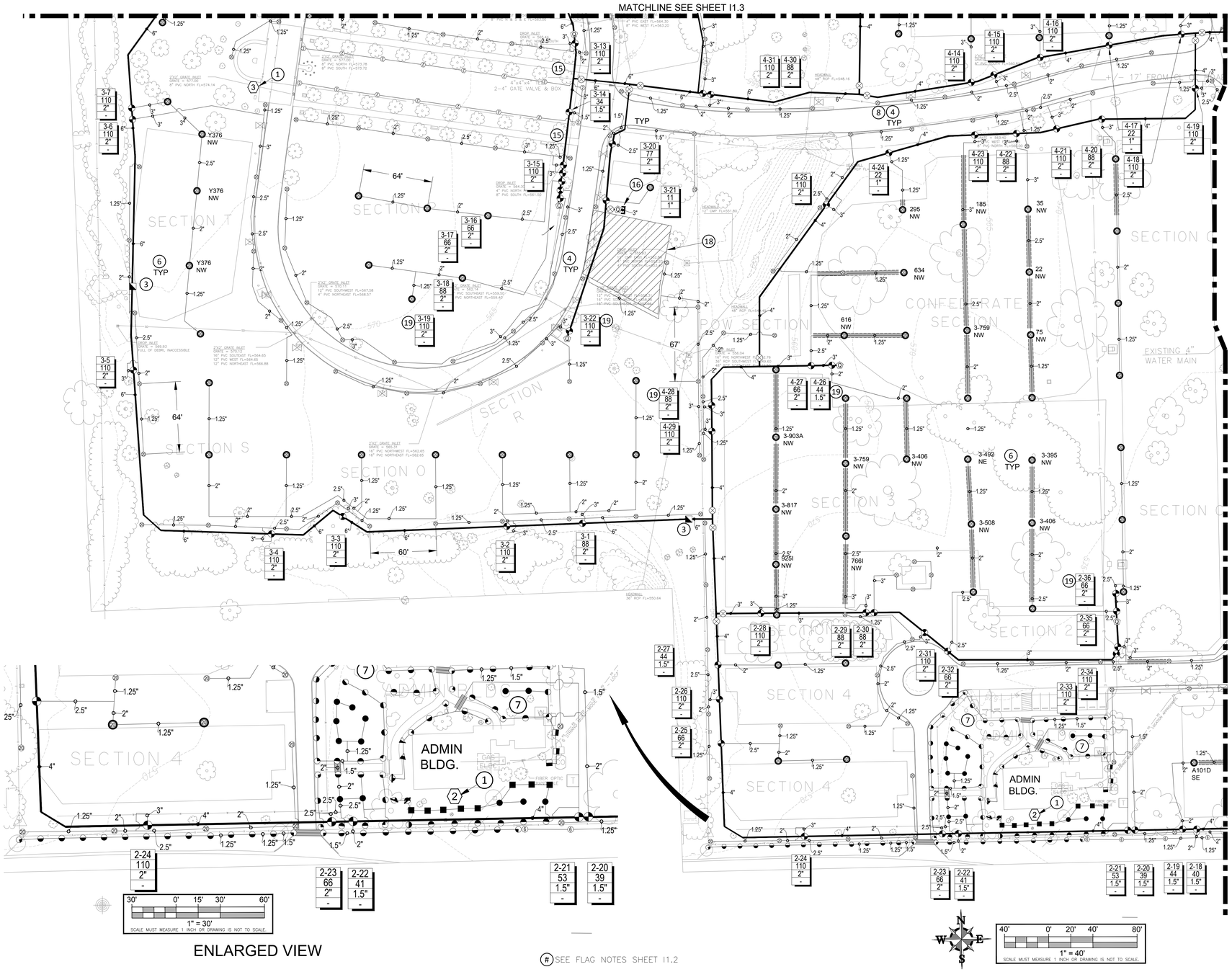
Drawing Title	IRRIGATION PLAN
Approved: Project Director	
Project Title	CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY
Location	CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS
Date	01/28/2014
Checked	RWB
Drawn	JDL/JHK
Project Number	806CM3024
Building Number	
Drawing Number	I1.4
Dwg.	4 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

VA FORM 08–6231



ENLARGED VIEW

(#) SEE FLAG NOTES SHEET I1.2

LEGEND

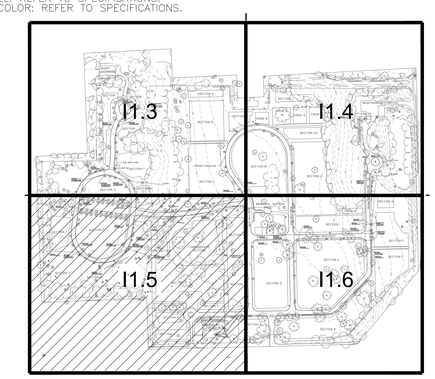
- EXISTING POTABLE WATER LINE
  - *SIZE: 6-INCH
  - *PURVEYOR: SUGAR CREEK WATER DISTRICT, DON CARVER 217.523.1895
- EXISTING WATER MAIN TO POTABLE HYDRANTS
  - *4-INCH PVC
- SLEEVING - FOR LATERAL PIPE ONLY SHEETS I1.3 THRU I1.7
  - *TYPE: CLASS 200 PVC OR C900 PVC
  - *SIZE PER SPECIFICATIONS
- MAINLINE PIPE
  - *TYPE: HDPE DR11
  - *SIZE: PER PLANS
- LATERAL PIPE TO SPRINKLERS
  - *TYPE: CLASS 160 PVC
  - *SIZE: 1-INCH UNLESS OTHERWISE INDICATED
- HAND DUG LATERAL AND MAINLINE PIPE
- UNCONNECTED PIPE CROSSING
- POINT-OF-CONNECTION (P.O.C.)
- TAP AND WATER METER ASSEMBLY
  - *PER SUGAR CREEK WATER DISTRICT STANDARDS
- BACKFLOW PREVENTER/BOOSTER PUMP ASSEMBLY
  - *REFER TO DETAIL
- WINTERIZATION ASSEMBLY
  - *REFER TO DETAIL
- ISOLATION GATE VALVE ASSEMBLY
  - *MODEL: REFER TO SPECIFICATIONS
  - *SIZE: OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE
- QUICK COUPLING VALVE ASSEMBLY
  - *MODEL: REFER TO SPECIFICATIONS
- AIR VACUUM RELIEF VALVE ASSEMBLY
  - *MODEL: REFER TO SPECIFICATIONS
- REMOTE CONTROL VALVE ASSEMBLY
  - *MODEL: REFER TO SPECIFICATIONS
  - *SIZE: AS INDICATED ON PLANS
  - *ANGLE VALVE: REFER TO SPECIFICATIONS
  - *SOLENIOD: REFER TO SPECIFICATIONS
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 5 FEET
  FLOW (GPM): Q - 0.10 H - 0.20 F - 0.41
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 8 FEET
  FLOW (GPM): Q - 0.26 H - 0.52 F - 1.05
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 10 FEET
  FLOW (GPM): Q - 0.39 H - 0.79 F - 1.58
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 12 FEET
  FLOW (GPM): Q - 0.65 H - 1.30 F - 2.60
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 15 FEET
  FLOW (GPM): Q - 0.92 H - 1.85 F - 3.70
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 30 FEET
  FLOW (GPM): 1.21
- POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE
  PRESSURE: 30 PSI RADIUS: 4 x 15 FEET
  FLOW (GPM): 0.61
- POP-UP ROTOR SPRINKLER: 70 PSI
  *MODEL: REFER TO SPECIFICATIONS
  *SYMBOL WITH HALO AROUND IT IS FULL CIRCLE, SYMBOL WITHOUT IS PART CIRCLE
  - 20 — HALO = FULL CIRCLE ROTOR; NOZZLE NUMBER
  - 20 — NO HALO = PART CIRCLE ROTOR; NOZZLE NUMBER

NOZZLES USED:

NOZZLE: 2.0	RADIUS: 39'	FLOW: 2.1 GPM
NOZZLE: 4.0	RADIUS: 39'	FLOW: 4.7 GPM
NOZZLE: 6.0	RADIUS: 45'	FLOW: 6.7 GPM
NOZZLE: 10.0	RADIUS: 55'	FLOW: 11.1 GPM
NOZZLE: 20.0	RADIUS: 71'	FLOW: 22 GPM

- 20 — N229 NM: HEADSTONE IDENTIFIER; QUADRANT; ROTOR SPRINKLER
- (1)(2)(3)(4) IRRIGATION CONTROLLER ASSEMBLY: REFER TO SPECIFICATIONS
  - CONTROLLER "1": 48 STATIONS, 44 STATIONS USED
  - CONTROLLER "2": 48 STATIONS, 36 STATIONS USED
  - CONTROLLER "3": 48 STATIONS, 22 STATIONS USED
  - CONTROLLER "4": 48 STATIONS, 35 STATIONS USED
- (W) WEATHER SENSORS:
  *MODEL: REFER TO SPECIFICATIONS
- 95 / 8 / 1" — INDICATES CONTROLLER STATION NUMBER; INDICATES LATERAL DISCHARGE IN GPM; INDICATES REMOTE CONTROL VALVE SIZE IN INCHES

VALVE BOXES
*MODEL: REFER TO SPECIFICATIONS.
*LID COLOR: REFER TO SPECIFICATIONS.



KEYMAP N.T.S.

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Revisions:	Date

CONSULTANTS:

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Drawing Title	IRRIGATION PLAN
Approved Project Director	
Project Title	CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY
Location	CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS
Date	01/28/2014
Checked	RWB
Drawn	JDL/JHK
Project Number	806CM3024
Building Number	
Drawing Number	I1.5
Dwg.	5 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

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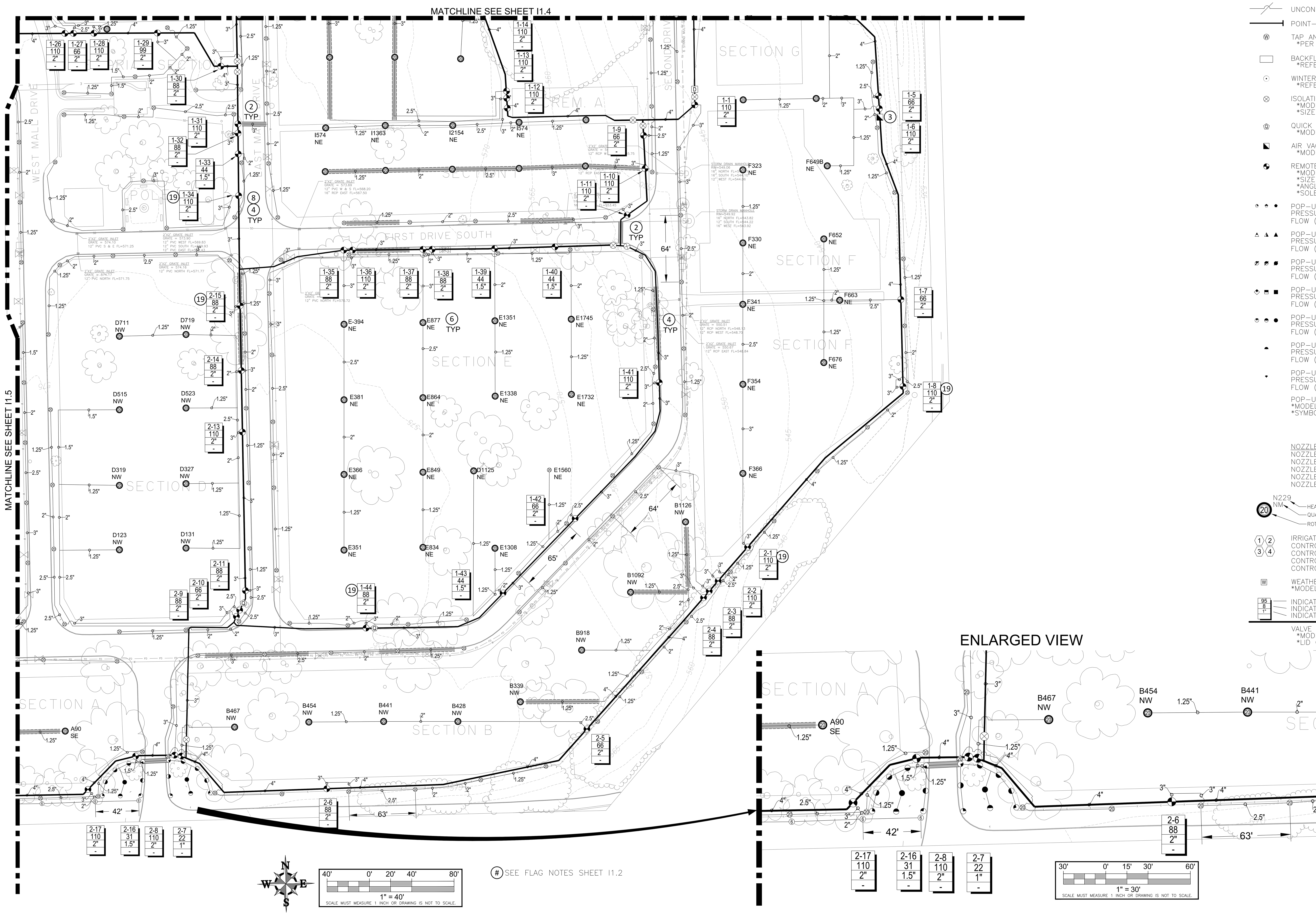


(#) SEE FLAG NOTES SHEET I1.2

LEGEND

Existing potable water line	EXISTING POTABLE WATER LINE *SIZE: 6-INCH *PURVEYOR: SUGAR CREEK WATER DISTRICT, DON CARVER 217.523.1895
Existing water main	EXISTING WATER MAIN TO POTABLE HYDRANTS *4-INCH PVC
Sleeving	SLEEVING – FOR LATERAL PIPE ONLY SHEETS I1.3 THRU I1.7 *TYPE: CLASS 200 PVC OR C900 PVC *SIZE PER SPECIFICATIONS
Mainline pipe	MAINLINE PIPE *TYPE: HDPE DR11 *SIZE: PER PLANS
Lateral pipe	LATERAL PIPE TO SPRINKLERS *TYPE: CLASS 160 PVC *SIZE: 1-INCH UNLESS OTHERWISE INDICATED
Hand dug pipe	HAND DUG LATERAL AND MAINLINE PIPE
Pipe crossing	UNCONNECTED PIPE CROSSING
P.O.C.	POINT-OF-CONNECTION (P.O.C.)
Ⓦ	TAP AND WATER METER ASSEMBLY *PER SUGAR CREEK WATER DISTRICT STANDARDS
▭	BACKFLOW PREVENTER/BOOSTER PUMP ASSEMBLY *REFER TO DETAIL
⊙	WINTERIZATION ASSEMBLY *REFER TO DETAIL
⊗	ISOLATION GATE VALVE ASSEMBLY *MODEL: REFER TO SPECIFICATIONS *SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE
Quick coupler	QUICK COUPLING VALVE ASSEMBLY *MODEL: REFER TO SPECIFICATIONS
Air vacuum valve	AIR VACUUM RELIEF VALVE ASSEMBLY *MODEL: REFER TO SPECIFICATIONS
Remote control valve	REMOTE CONTROL VALVE ASSEMBLY *MODEL: REFER TO SPECIFICATIONS *SIZE: AS INDICATED ON PLANS *ANGLE VALVE: REFER TO SPECIFICATIONS *SOLENIOD: REFER TO SPECIFICATIONS
Spray (5 ft)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 5 FEET FLOW (GPM): Q – 0.10 H – 0.20 F – 0.41
Spray (8 ft)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 8 FEET FLOW (GPM): Q – 0.26 H – 0.52 F – 1.05
Spray (10 ft)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 10 FEET FLOW (GPM): Q – 0.39 H – 0.79 F – 1.58
Spray (12 ft)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 12 FEET FLOW (GPM): Q – 0.65 H – 1.30 F – 2.60
Spray (15 ft)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 15 FEET FLOW (GPM): Q – 0.92 H – 1.85 F – 3.70
Spray (4 x 30)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 4 x 30 FEET FLOW (GPM): 1.21
Spray (4 x 15)	POP-UP SPRAY SPRINKLER: PRESSURE REGULATING, CHECK VALVE PRESSURE: 30 PSI RADIUS: 4 x 15 FEET FLOW (GPM): 0.61
Rotor	POP-UP ROTOR SPRINKLER: 70 PSI *MODEL: REFER TO SPECIFICATIONS *SYMBOL WITH HALO AROUND IT IS FULL CIRCLE, SYMBOL WITHOUT IS PART CIRCLE (20) HALO = FULL CIRCLE ROTOR; NOZZLE NUMBER (20) NO HALO = PART CIRCLE ROTOR; NOZZLE NUMBER

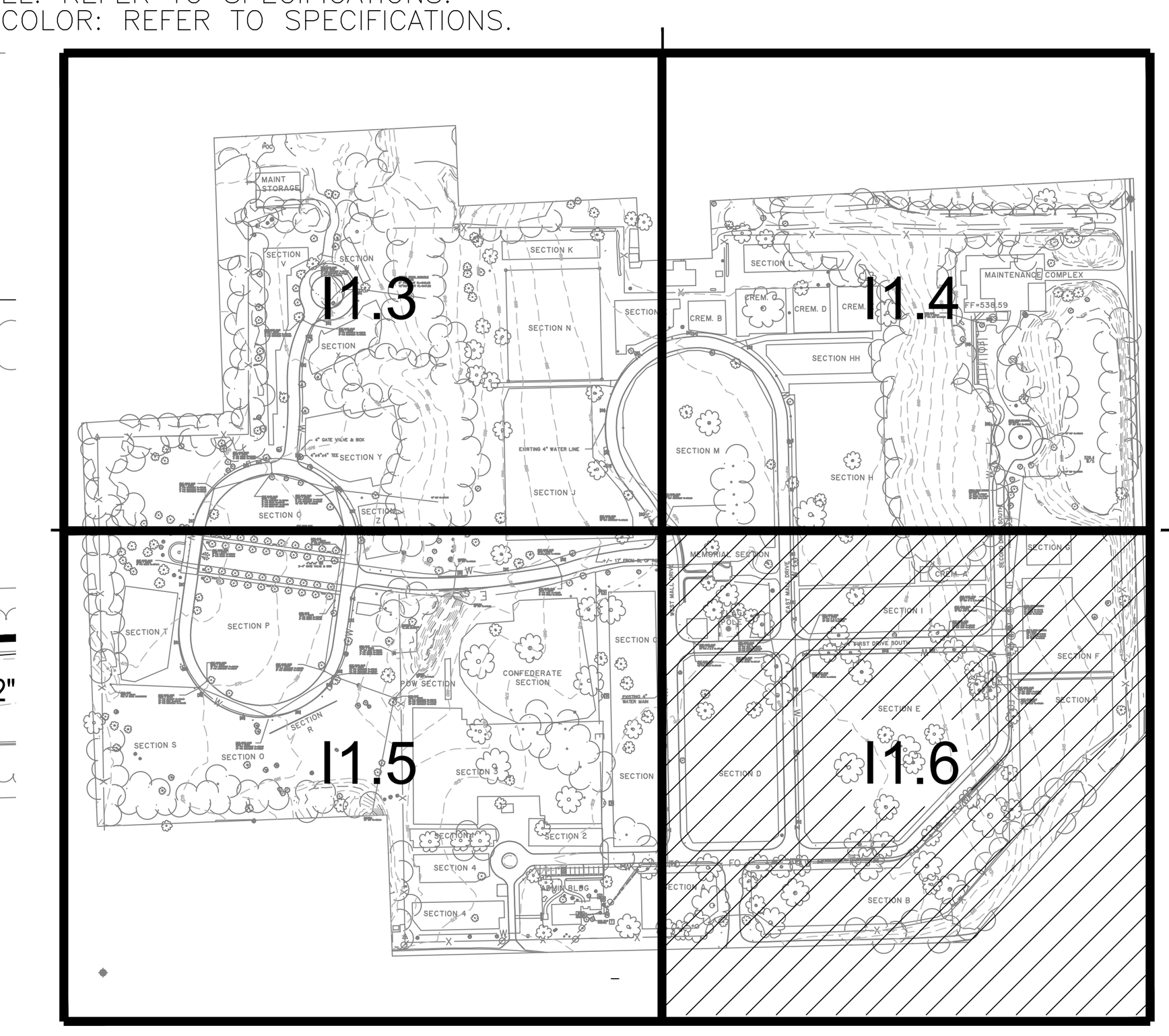
NOZZLES USED:

NOZZLE	RADIUS	FLOW
NOZZLE: 2.0	RADIUS: 39'	FLOW: 2.1 GPM
NOZZLE: 4.0	RADIUS: 39'	FLOW: 4.7 GPM
NOZZLE: 6.0	RADIUS: 45'	FLOW: 6.7 GPM
NOZZLE: 10.0	RADIUS: 55'	FLOW: 11.1 GPM
NOZZLE: 20.0	RADIUS: 71'	FLOW: 22 GPM

N229 — HEADSTONE IDENTIFIER
NM — QUADRANT
(20) — ROTOR SPRINKLER

(1)(2)(3)(4)	IRRIGATION CONTROLLER ASSEMBLY: REFER TO SPECIFICATIONS CONTROLLER "1": 48 STATIONS, 44 STATIONS USED CONTROLLER "2": 48 STATIONS, 36 STATIONS USED CONTROLLER "3": 48 STATIONS, 22 STATIONS USED CONTROLLER "4": 48 STATIONS, 35 STATIONS USED
W	WEATHER SENSORS: *MODEL: REFER TO SPECIFICATIONS
95 / 8 / 1"	INDICATES CONTROLLER STATION NUMBER INDICATES LATERAL DISCHARGE IN GPM INDICATES REMOTE CONTROL VALVE SIZE IN INCHES

VALVE BOXES
*MODEL: REFER TO SPECIFICATIONS.
*LID COLOR: REFER TO SPECIFICATIONS.



KEYMAP
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Drawing Title: IRRIGATION PLAN	Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY	Project Number: 806CM3024	NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE
		Building Number:	
Approved: Project Director	Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS	Drawing Number: I1.6	Department of Veterans Affairs
	Date: 01/28/2014 · Checked: RWB · Drawn: JDL/JHK	Dwg. 6 of 15	

VA FORM 08-6231

LEGEND - THIS SHEET ONLY

- IRRIGATION MAINLINE PIPE – REFER TO IRRIGATION PLANS AND SPECIFICATIONS.
- SLEEVE – SHOWN FOR WIRE ONLY THIS SHEET, CL 200 PVC SIZED PER IRRIGATION SPECIFICATIONS.
- c — c — c — COMMUNICATION CABLE FROM CONTROLLER ASSEMBLY TO BOOSTER PUMP ASSEMBLY – REFER TO SPECIFICATIONS
- WIRE PATH CONTROLLER 1
- WIRE PATH CONTROLLER 2
- WIRE PATH CONTROLLER 3
- WIRE PATH CONTROLLER 4
- 1 2 / 3 4 IRRIGATION CONTROLLER ASSEMBLY – REFER TO IRRIGATION PLANS AND SPECIFICATIONS
- C WEATHER SENSORS.

SUGGESTED PHASING PLAN

PHASE BOUNDARY, EACH PHASE IS EXPECTED TO LAST 2 WEEKS.

PHASE 1: DEVELOP THE ENTRY ROAD, MOBILIZE AND DEVELOPE THE POINT OF CONNECTION. INSTALL CONTROLLER 4

PHASE 2: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS V AND T. INSTALL CONTROLLER 3

PHASE 3: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS X, Y AND Z.

PHASE4 4: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS J, K AND N.

PHASE5: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS H,I AND L. CREMAIN SECTIONS B, C, D AND E. INSTALL CONTROLLER 1.

PHASE 6: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS M, COMMITTAL SHELTER AND MEMORIAL AREAS

PHASE 7: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS B, E, F AND G.

PHASE 8: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR BURIAL SECTIONS R AND CONFEDERATE AREA.

PHASE 9: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR ADMINISTRATION BUILDING, SECTION 4 AND CONTROLLER 2.

PHASE 10: INSTALL IRRIGATION MAINLINE, VALVES SPRINKLERS AND CONTROLS FOR ADMINISTRATION BUILDING, SECTION 1, 2, 3, C AND D.

REFER TO SHEET I1.2 FOR FLAG NOTES INDICATED ON THIS SHEET.

WEATHER SENSOR
IRRIGATION CONTROLLER "4"
*120 VAC POWER REQUIRED
*20 AMP DEDICATED CIRCUIT
*WIRELESS 3G GPRS COMMUNICATION TO CLOUD CAPABILITY.

IRRIGATION CONTROLLER "1"
*120 VAC POWER REQUIRED
*20 AMP DEDICATED CIRCUIT
*WIRELESS 3G GPRS COMMUNICATION TO CLOUD CAPABLE.

IRRIGATION CONTROLLER "3"
*120 VAC POWER REQUIRED
*20 AMP DEDICATED CIRCUIT
*WIRELESS 3G GPRS COMMUNICATION TO CLOUD CAPABLE.

IRRIGATION CONTROLLER "2"
*120 VAC POWER REQUIRED
*20 AMP DEDICATED CIRCUIT
*WIRELESS 3G GPRS COMMUNICATION TO CLOUD CAPABLE.

PHASE 1 · PHASE 2 · PHASE 3 · PHASE 4 · PHASE 5 · PHASE 6 · PHASE 7 · PHASE 8 · PHASE 9 · PHASE 10

SECTION A · SECTION B · SECTION C · SECTION D · SECTION E · SECTION F · SECTION G · SECTION H · SECTION I · SECTION J · SECTION K · SECTION L · SECTION M · SECTION N · SECTION O · SECTION P · SECTION R · SECTION S · SECTION T · SECTION V · SECTION X · SECTION Y · SECTION Z

MAINTENANCE COMPLEX · MAINT STORAGE · ADMIN BLDG · MEMORIAL SECTION · CONFEDERATE SECTION · POW SECTION · CREM. A · CREM. B · CREM. C · CREM. D · CREM. E · FIRST DRIVE SOUTH · EXISTING 4" WATER MAIN · 4" GATE VALVE & BOX · EXISTING 4" WATER LINE

60' 0' 30' 60' 120'
1" = 60'
SCALE MUST MEASURE 1 INCH OR DRAWING IS NOT TO SCALE.

FINAL CONSTRUCTION

Revisions:	Date

CONSULTANTS:

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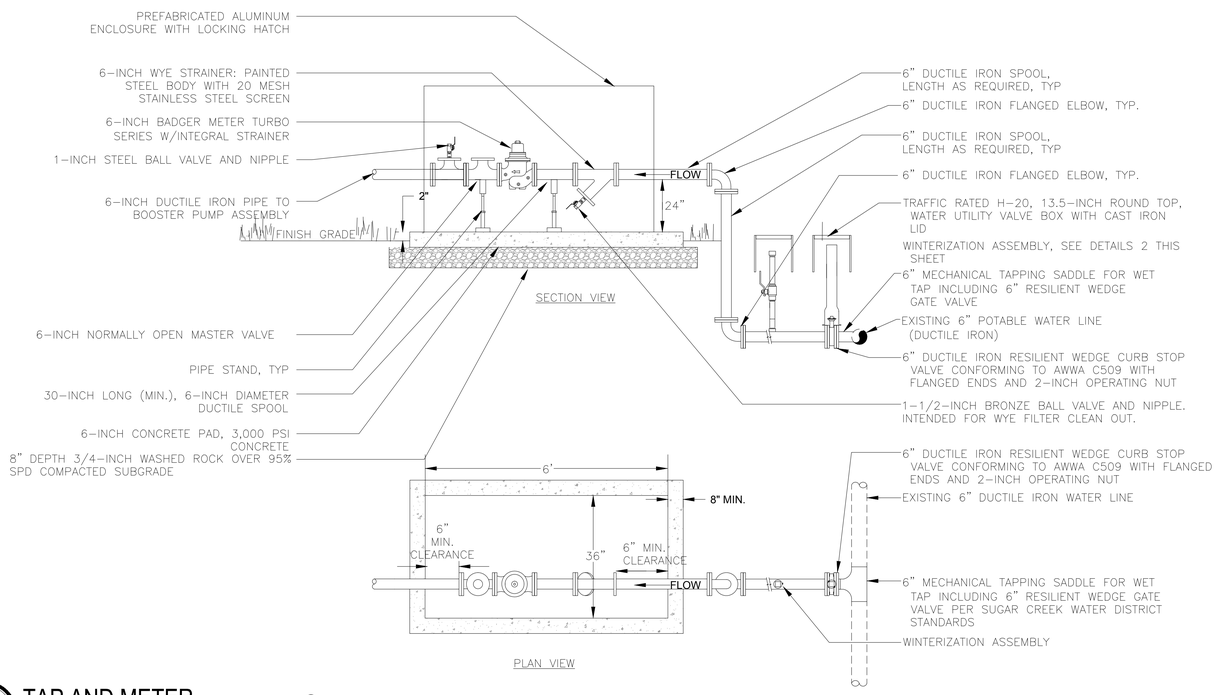
Drawing Title	IRRIGATION CONTROL AND PHASE SCHEMATIC
Approved: Project Director	
Project Title	CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY
Location	CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS
Date	01/28/2014
Checked	RWB
Drawn	JDL/JHK
Project Number	806CM3024
Building Number	
Drawing Number	I1.7
Dwg.	7 of 15

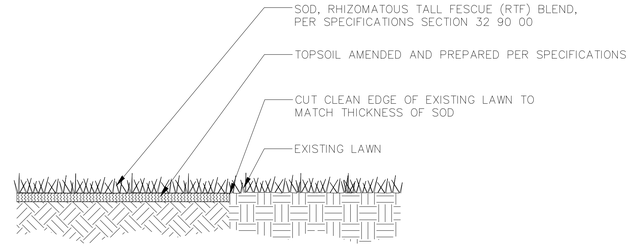
NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE
Department of Veterans Affairs

VA FORM 08-6231



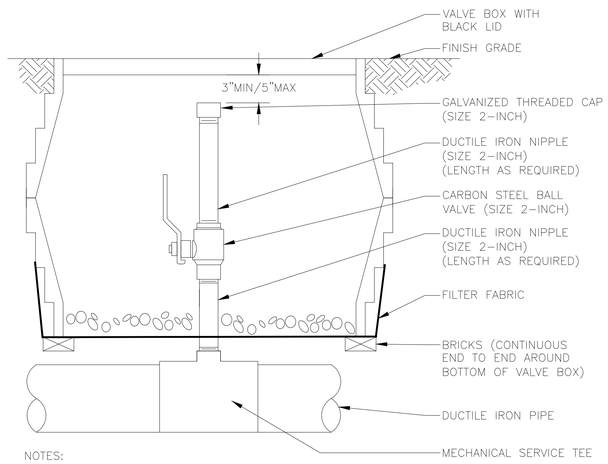
NOTES:
1. PROVIDE SHOP DRAWING OF ASSEMBLY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. VERIFY DIMENSIONS OF ALL EQUIPMENT. ADJUST ALUMINUM ENCLOSURE AS NEEDED TO CONTAIN ALL EQUIPMENT.
2. LOCATION OF METER ASSEMBLY MUST BE COORDINATED WITH THE CONTRACTING OFFICER'S REPRESENTATIVE ON SITE PRIOR TO CONSTRUCTION.
3. USE ONLY STAINLESS STEEL HARDWARE FOR FLANGED CONNECTIONS.
4. INTENT OF BALL VALVE DOWN STREAM OF THE METER IS TO BLOW OUT THE BACKFLOW PREVENTER AND BOOSTER PUMP. THE BALL VALVE ON THE WYE STRAINER CAN BE USED TO DRAIN VAULT PIPING AND FLUSHING WYE STRAINER.
5. USE FLANGED DUCTILE IRON ELBOWS ON DOWNSTREAM END OF ASSEMBLY TO TRANSITION TO BOOSTER PUMP ASSEMBLY.
6. COORDINATE AMR REMOTE READ DEVICE REQUIREMENTS WITH SUGAR CREEK WATER DISTRICT.
7. FOLLOW THE ILLINOIS PLUMBING CODE AND IEPA REGULATIONS FOR BACKFLOW PREVENTION – BOTH INSTALLATION AND ANNUAL TESTING AS REQUIRED.
8. CONFIRM EXACT DEPTH OF EXISTING 6-INCH DUCTILE IRON WATER LINE PRIOR TO TAP AND METER INSTALLATION.

1 TAP AND METER ASSEMBLY
N.T.S.



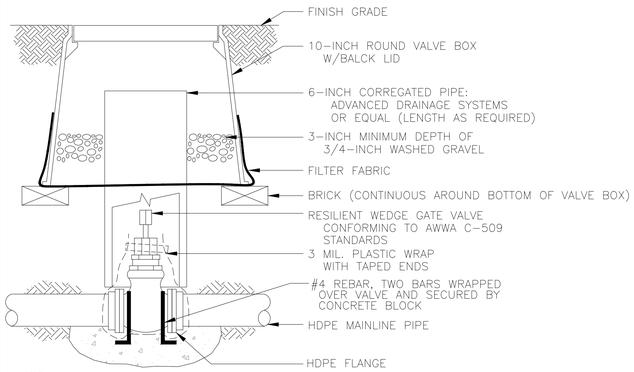
4 SOD INSTALLATION DETAIL
N.T.S.

FINAL CONSTRUCTION



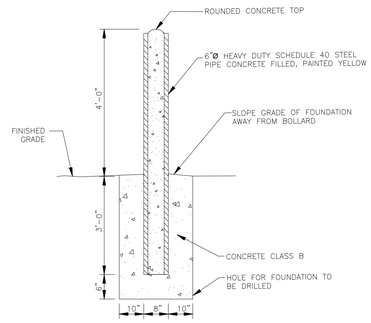
NOTES:
1. INSTALL VALVE BOX SO THERE IS A CLEARANCE OF 2" BETWEEN THE BOTTOM OF THE VALVE BOX AND THE MAINLINE PIPE.
2. INSTALL FILTER FABRIC AROUND EXTERIOR OF VALVE BOX. USE DUCT TAPE TO SECURE FABRIC TO PIPE AND VALVE BOX.
3. BRAND VALVE BOX LID PER SPECIFICATIONS.
4. TRANSITION TO HDPE PIPE BY INSTALLING MJ X FL DUCTILE IRON ADAPTER 3-FEET DOWNSTREAM OF WINTERIZATION ASSEMBLY.

2 WINTERIZATION ASSEMBLY
N.T.S.



NOTES:
1. NOMINAL SIZE OF GATE VALVE TO MATCH NOMINAL MAINLINE SIZE.
2. INSTALL A 4-INCH THICK CONCRETE PAD BELOW VALVE WITH NO. 4 REBAR WHEN USING PUSH-ON TYPE VALVES.
3. RESILIENT WEDGE GATE VALVE MAY HAVE EITHER MECHANICAL JOINT OR PUSH-ON GASKETED ENDS. THE OPERATOR IS A WRENCH NUT.
4. ANCHOR ISOLATION VALVE TO CONCRETE BY BENDING REBAR OVER EACH END OF VALVE AND EXTENDING A MINIMUM OF 6-INCHES INTO CONCRETE SUPPORT BLOCK.
5. WRAP VALVE ENDS AND BODY IN 3 MIL. PLASTIC PRIOR TO POURING CONCRETE.
6. CONCRETE SUPPORT BLOCK IS TO BE POURED UNDER ISOLATION GATE VALVE. ONLY THE BOTTOM OF THE ISOLATION GATE VALVE TO BE IN CONTACT WITH CONCRETE.
7. INSTALL FILTER FABRIC AROUND EXTERIOR OF VALVE BOX. USE DUCT TAPE TO SECURE FABRIC TO PIPE AND VALVE BOX.
8. BRAND VALVE BOX LID PER SPECIFICATIONS.

3 ISOLATION GATE VALVE ASSEMBLY
N.T.S.



NOTES:
SPACE 4' O.C. AROUND BACKFLOW PREVENTER/BOOSTER PUMP AND TAP AND METER.

4 BOLLARD INSTALLATION DETAIL
N.T.S.

FINAL CONSTRUCTION

Revisions:	Date

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Drawing Title: IRRIGATION DETAILS

Approved Project Director:

Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY

Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS

Date: 01/28/2014 | Checked: RWB | Drawn: JDL/JHK

Project Number: 806CM3024

Building Number:

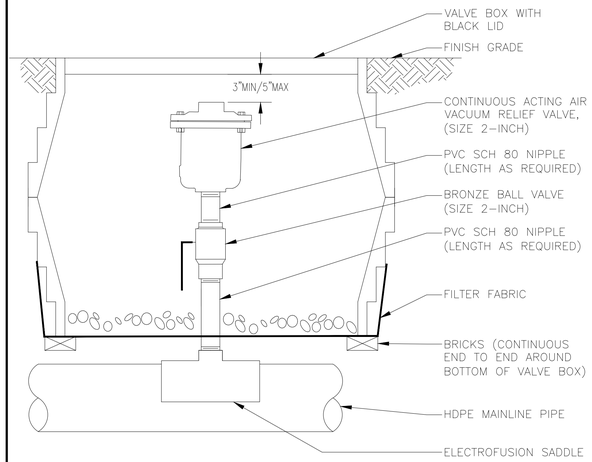
Drawing Number: I1.8

Dwg. 8 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

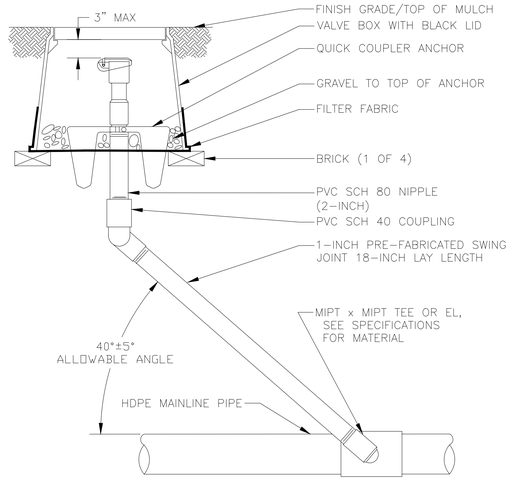
VA FORM 08-6231



NOTES:
1. INSTALL VALVE BOX SO THERE IS A CLEARANCE OF 2" BETWEEN THE BOTTOM OF THE VALVE BOX AND THE MAINLINE PIPE.
2. INSTALL FILTER FABRIC AROUND EXTERIOR OF VALVE BOX. USE DUCT TAPE TO SECURE FABRIC TO PIPE AND VALVE BOX.
3. BRAND VALVE BOX LID PER SPECIFICATIONS.

1 AIR VACUUM RELIEF VALVE ASSEMBLY

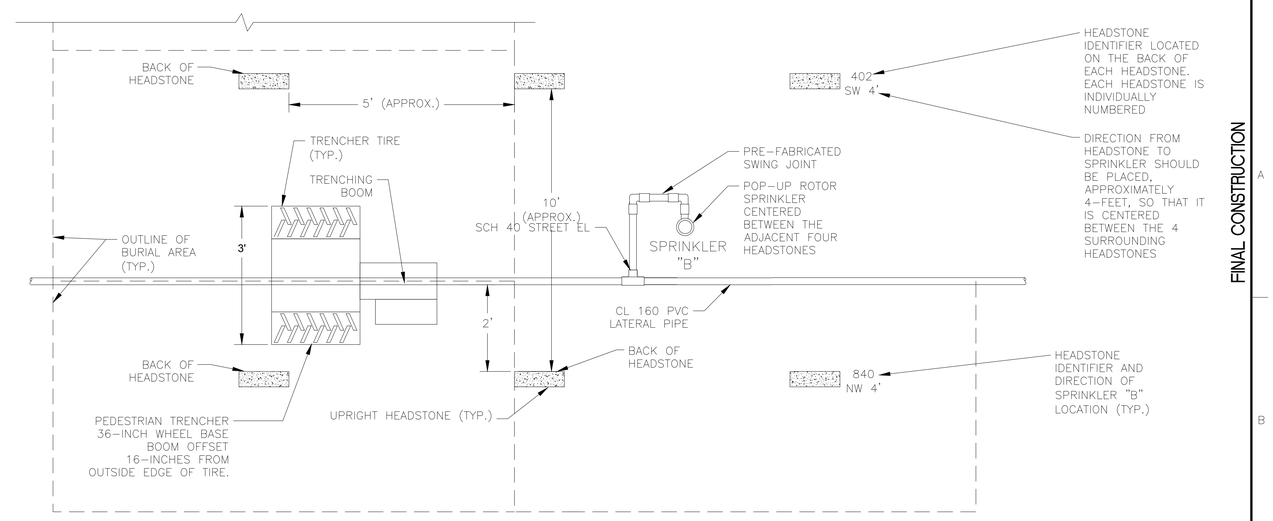
N.T.S.



NOTES:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.
2. INSTALL SWING JOINT LAY ARM BETWEEN 30° AND 45° OF LATERAL PIPE IN ORDER TO ABSORB DOWNWARD IMPACT. IF SWING JOINT CAN NOT BE INSTALLED AT SPECIFIED ANGLE, CONSULT COR PRIOR TO INSTALLATION OF SWING JOINT.
3. BRAND VALVE BOX LID PER SPECIFICATIONS.

2 QUICK COUPLING VALVE ASSEMBLY

N.T.S.

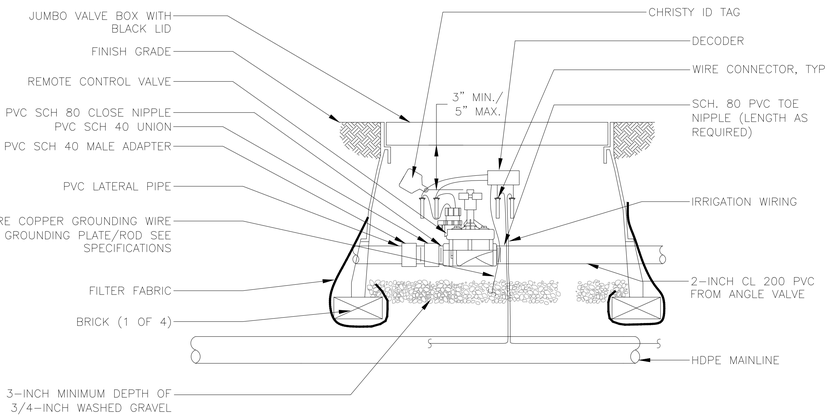


NOTES:
1. CONTRACTOR RESPONSIBLE FOR STAKING TRENCH LOCATION IN THE CORRECT LOCATION BETWEEN GRAVE MARKERS.
2. CONTRACTOR MUST PROTECT EXISTING HEADSTONES PRIOR TO CONSTRUCTION OF EACH PHASE. CONTRACTOR MUST DOCUMENT CONDITION OF ALL EXISTING HEADSTONES PRIOR TO CONSTRUCTION WITH SITE INSPECTOR PRESENT. UPON COMPLETION OF EACH PHASE THE CONTRACTOR AND SITE INSPECTOR WILL VERIFY THE CONDITION OF ALL HEADSTONES .
3. IF HEADSTONES HAVE BEEN DISTURBED OR DAMAGED DURING CONSTRUCTION CONTRACTOR SHALL CORRECT OR REPAIR HEADSTONES IMMEDIATELY PRIOR TO FINISHING CONSTRUCTION IN THE AFFECTED BURIAL SECTION.

3 SPRINKLER PLACEMENT IN BURIAL AREAS

N.T.S.

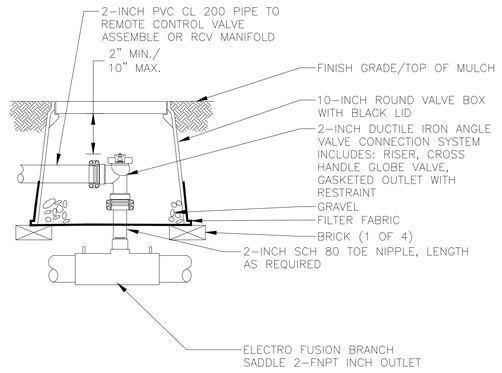
FINAL CONSTRUCTION

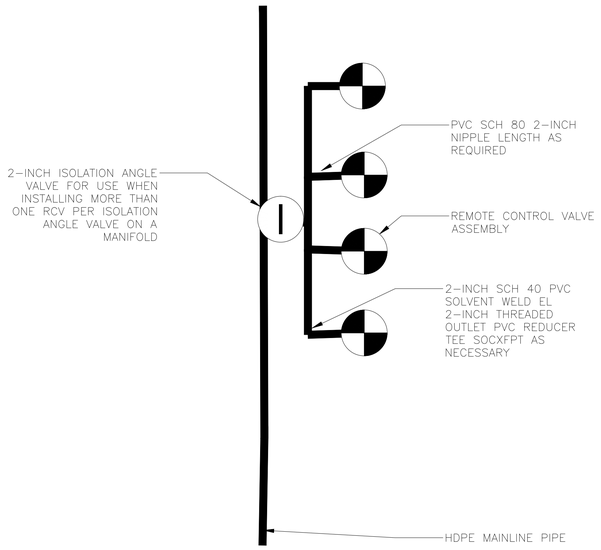


NOTES:
1. USE VALVE BOX EXTENSION AS NECESSARY TO ACHIEVE MINIMUM DIMENSIONS ABOVE ASSEMBLY.
2. INSTALL FILTER FABRIC AROUND EXTERIOR OF VALVE BOX. USE DUCT TAPE TO SECURE FABRIC TO PIPE AND VALVE BOX.
3. TRANSITION TO PROPER LATERAL PIPE BURIAL DEPTH USING 45° ELBOW FITTINGS DOWNSTREAM OF REMOTE CONTROL VALVE ASSEMBLY.
4. DO NOT CUT OUT ENDS OF VALVE BOX UNNECESSARILY.
5. POSITION VALVE BOX OVER VALVE TO ALLOW ACCESS TO SOLENOID AND PROPER OPERATION OF BALL VALVE. DO NOT PLACE VALVE BOX DIRECTLY ON LATERAL PIPE.
6. COIL 3-FEET OF WIRE FOR EACH DECODER FOR SERVICE PURPOSES.
7. BRAND VALVE BOX LID PER SPECIFICATIONS.
8. INSTALL PRESSURE REGULATOR ON ALL REMOTE CONTROL VALVES. SET PRESSURE MODULE TO INDICATED PRESSURE ON LEGEND PER MANUFACTURER'S RECOMMENDATIONS.
9. VALVE BOXES WILL BE CLEAN AND FREE OF DEBRIS AND SILT AT FINAL INSPECTION.

4 REMOTE CONTROL VALVE ASSEMBLY

N.T.S.





FOR MANIFOLDS:
1. SPACE VALVES A UNIFORM DISTANCE APART.
2. USE MANUFACTURER'S RECOMMENDED TORQUE ON RESTRAINTS. A CALIBRATED TORQUE BAR WILL BE REQUIRED AND CALIBRATION TESTING RESULTS WILL BE AVAILABLE UPON REQUEST.
3. NO MORE THAN 4 REMOTE CONTROL VALVES MAY BE ON THE SAME ISOLATION MANIFOLD.

Revisions:	Date

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Drawing Title: IRRIGATION DETAILS

Approved Project Director:

FINAL CONSTRUCTION

Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY

Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS

Date: 01/28/2014 | Checked: RWB | Drawn: JDL/JHK

Project Number: 806CM3024

Building Number:

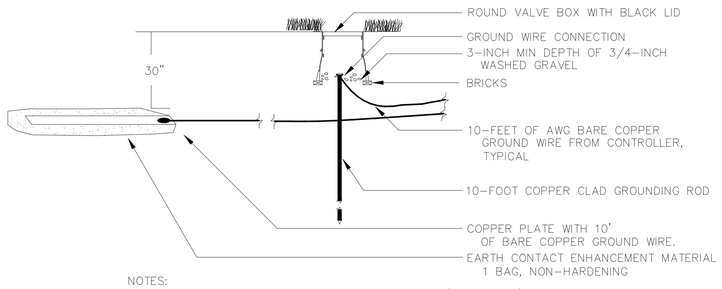
Drawing Number: I1.9

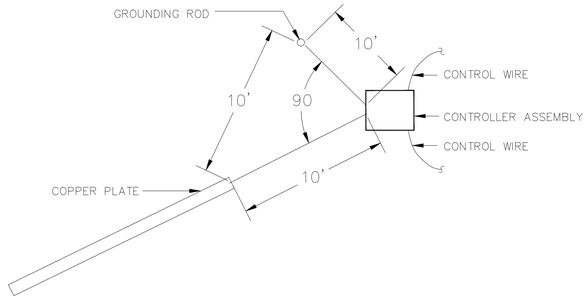
Dwg. 9 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

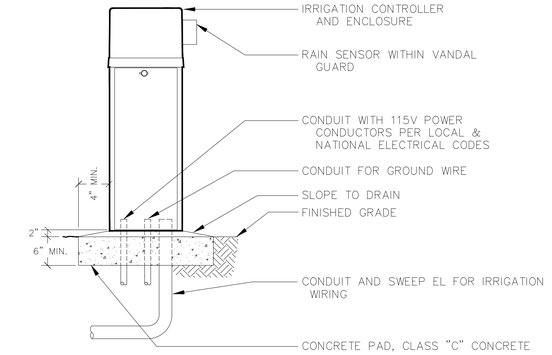
VA FORM 08-6231





NOTES:
1. REFER TO TO IRRIGATION CONTROLLER ASSEMBLY (THIS SHEET) FOR ADDITIONAL INFORMATION.
2. BRAND VALVE BOX LID PER SPECIFICATIONS.
3. DO NOT ROUTE CONTROL WIRES AND BARE COPPER GROUND WIRE IN COMMON TRENCH.

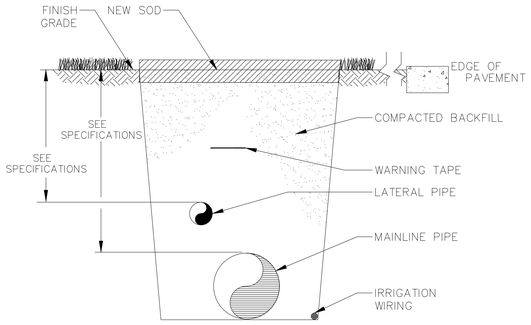
1 CONTROLLER GROUNDING DETAIL ©
N.T.S.



NOTES:
1. IN ACCORDANCE WITH AMERICAN SOCIETY OF IRRIGATION CONSULTANTS GUIDELINE 100-2002 "FOR EARTH GROUNDING ELECTRONICS EQUIPMENT IN IRRIGATION SYSTEMS", SECTION 12 PARAGRAPH 1: "ELECTRONIC EQUIPMENT AND WIRES/CABLES SHALL BE INSTALLED OUTSIDE OF THE SPHERE OF INFLUENCE OF THE GROUNDING GRID. THIS IS NECESSARY TO AVOID RE-INJECTING THE DISCHARGED LIGHTNING ENERGY INTO THE EQUIPMENT AND THE UNDERGROUND WIRES AND CABLES."
2. SEAL OPENING IN TOP OF CONDUITS WITH EXPANDING FOAM AFTER WIRE INSTALLATION.

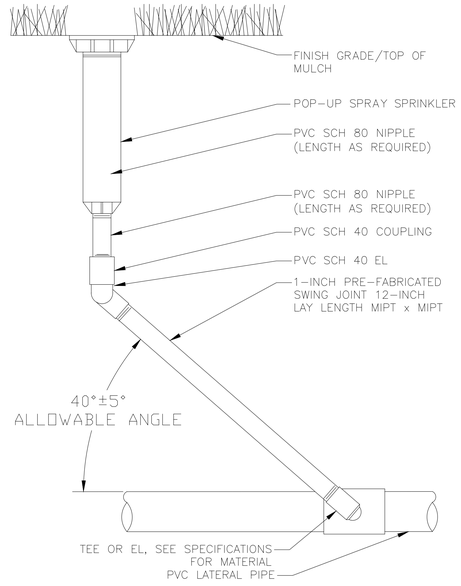
2 TWO-WIRE IRRIGATION CONTROL SCHEMATIC
N.T.S.

FINAL CONSTRUCTION



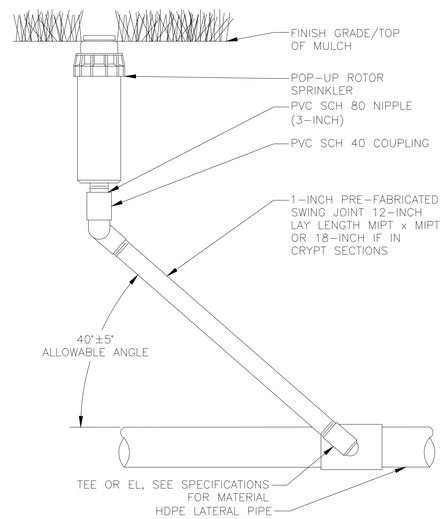
NOTES:
1. BACKFILL AND COMPACT ALL TRENCHES PER PLANTING SPECIFICATION.
2. ANY TRENCH SETTLING MUST BE BACKFILLED AND COMPACTED.
3. USE A SOD CUTTER AFTER BACKFILL TO MAKE A CLEAN LINE THE WIDTH OF THE NEW SOD TO BE INSTALLED. sET CUTTING DEPTH TO ENSURE THE EXISTING GRADE WILL MATCH THE TOP OF THE SOIL IN THE SOD. REFER TO SPECIFICATIONS FOR SOD TYPE.
4. INSTALL EROSION CONTROL ALONG THE DOWNHILL SIDE OF TRENCHES UNTIL SOD HAS BEEN INSTALLED.

3 TRENCH DETAIL
N.T.S.



NOTES:
1. INSTALL SWING JOINT LAY ARM BETWEEN 30° AND 45° OF LATERAL PIPE IN ORDER TO ABSORB DOWNWARD IMPACT. IF SWING JOINT CAN NOT BE INSTALLED AT SPECIFIED ANGLE, CONSULT COR PRIOR TO INSTALLATION OF SWING JOINT.

4 POP-UP SPRAY SPRINKLER ASSEMBLY
N.T.S.



NOTES:
1. INSTALL SWING JOINT LAY ARM BETWEEN 30° AND 45° OF LATERAL PIPE IN ORDER TO ABSORB DOWNWARD IMPACT. IF SWING JOINT CAN NOT BE INSTALLED AT SPECIFIED ANGLE, CONSULT COR PRIOR TO INSTALLATION OF SWING JOINT.

5 POP-UP ROTOR SPRINKLER ASSEMBLY
N.T.S.

Revisions:	Date

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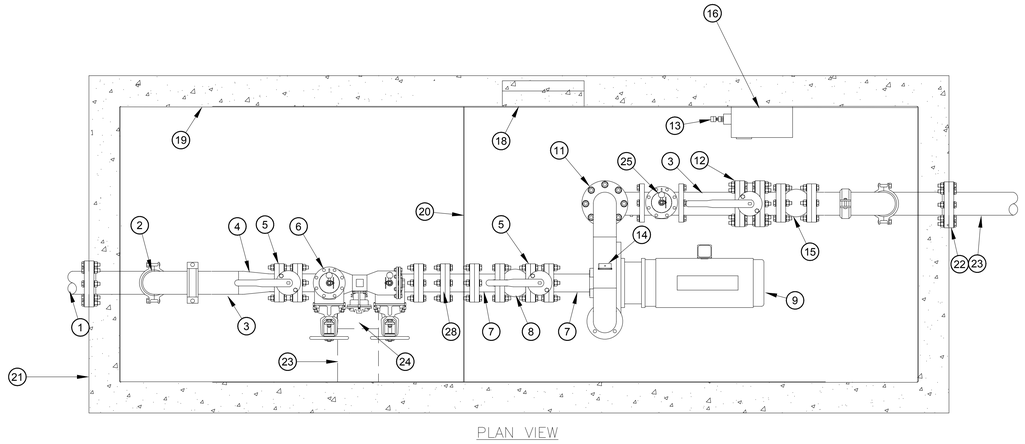
Dwg. 10 of 15	

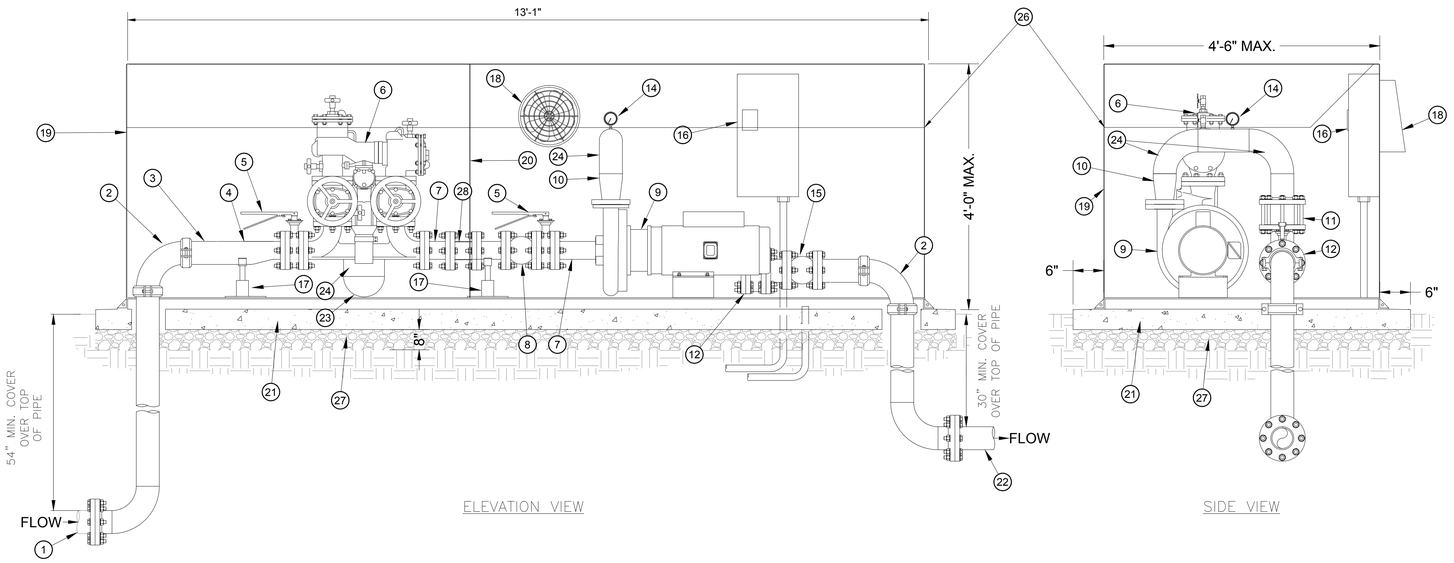
NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE
Department of Veterans Affairs

FINAL CONSTRUCTION

VA FORM 08-6231



PLAN VIEW



ELEVATION VIEW

SIDE VIEW

BOOSTER PUMP STATION EQUIPMENT SCHEDULE

1. 6" DUCTILE IRON PIPE FROM WATER METER
2. 6" PAINTED SCH 40 STEEL DOGLEG PIPE W/ VICTAULIC AND FLANGED END. LENGTH REQUIRED TO MEET MINIMUM PIPE DEPTHS SHOWN.
3. 6" PAINTED STEEL SCH 40 PIPE WITH VICTAULIC COUPLINGS
4. 6" X 4" PAINTED STEEL ECCENTRIC REDUCER
5. 4" ISOLATION BUTTERFLY VALVE (2 TOTAL)
6. 4" REDUCED PRESSURE ASSEMBLY BACKFLOW PREVENTER W/ VALVE SETTER AND AIR GAP DRAIN
7. 4" PAINTED STEEL SCH 40 PIPE
8. 4" METRAFLEX METRASPHERE STYLE R EXPANSION JOINT
9. 25 HP MAIN BOOSTER PUMP AND MOTOR
   - 600 GPM DESIGN FLOW
   - 43 PSI BOOST
   - 90 PSI DISCHARGE PRESSURE
   - 220 VAC, SINGLE PHASE POWER (INCOMING) CONVERTED TO 3 PHASE 480VAC
   - VFD CONTROLLED (REGENERATIVE DRIVE)
10. 4" X 6" STEEL CONCENTRIC REDUCER
11. WAFER TYPE CHECK VALVE SIZED TO MATCH PIPE
12. 6" ISOLATION BUTTERFLY VALVE (1 TOTAL)
13. PRESSURE TRANSDUCER (CABINET MOUNTED)
14. PRESSURE GAUGE 2.5" 150 PSI LIQUID FILLED
15. FLOW SENSOR (MAGNETIC FLOW METER)
16. ELECTRICAL STARTER, TIMERS, AND CONTROL CABINET (AIR-CONDITIONED). VARIABLE FREQUENCY DRIVE (REGENERATIVE TYPE) CONVERTS 460 VAC SINGLE PHASE TO 460 VAC THREE PHASE. VFD TO BE COOLED VIA AIR CONDITIONER.
17. PIPE SUPPORTS (AS REQUIRED TO SUPPORT ALL VALVES AND PIPE SECTIONS)
18. THERMOSTATICALLY CONTROLLED EXHAUST FAN
19. PAINTED ALUMINUM ENCLOSURE – SEE CONSTRUCTION NOTES
20. INTERNAL SEPARATION WALL
21. 8" THICK CONCRETE PAD W/#5 REBAR 12" OC EACH DIRECTION, EXTEND PAD 6" IN ALL DIMENSIONS FROM ENCLOSURE. SLOPE CONCRETE AWAY FROM ENCLOSURE AT A 2% SLOPE.
22. 6" DUCTILE IRON PIPE TO WINTERIZATION ASSEMBLY
23. 6" PAINTED STEEL SCH. 40 PIPE AND FITTINGS FOR BACKFLOW PREVENTER DISCHARGE (AIR GAP). DAYLIGHT PIPE FLUSH WITH ENCLOSURE. COORDINATE ENCLOSURE OPENING WITH ENCLOSURE MANUFACTURER.
24. 6" PAINTED STEEL SCH 40 EL.
25. 6-INCH SOLENOID OPERATED MASTER VALVE CONNECTED TO IRRIGATION CONTROLLER
26. LOCKING HATCH ENTIRE LENGTH OF THE ENCLOSURE.
27. 8" DEPTH 3/4-INCH WASHED ROCK OVER 95% SPD COMPACTED SUBGRADE
28. VA COMPLIANT SMART METER 4-INCH, MAG METER WITH DIGITAL OUTPUT.

CONSTRUCTION NOTES

1. BOOSTER PUMP IS TO OPERATE BASED ON PRESSURE.
2. PROGRAM PLC TO STOP BOOSTER PUMP OPERATION WHEN FLOW EXCEEDS 650 GPM (HIGH FLOW SHUT DOWN).
3. PROVIDE ALL NECESSARY CONDUIT AND CONDUCTORS AND MAKE ALL NECESSARY CONNECTIONS BETWEEN POWER SOURCE AND BOOSTER PUMP.
4. COORDINATE EXACT LOCATION OF ELECTRICAL POWER SUPPLY WITH COR ON SITE PRIOR TO CONSTRUCTION. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. INSTALL AND SECURE PUMP TO CONCRETE PAD PER MANUFACTURER'S GUIDELINES.
6. COORDINATE BOOSTER PUMP START UP AND TRAINING FROM THE MANUFACTURER'S REPRESENTATIVE.
7. CONTRACTOR MUST PROVIDE SHOP DRAWINGS AND RECEIVE ENGINEER APPROVAL PRIOR TO ORDERING.
8. ENCLOSURE COLOR TO BE COORDINATED WITH COR PRIOR TO ORDERING. COLOR TO BE INDICATED ON SHOP DRAWINGS.
9. ENCLOSURE IS TO BE INSULATED AND HEATED. HEATER TO BE THERMOSTAT CONTROLLED.
10. INTERNET MONITORING FOR BOOSTER PUMP WILL BE INSTALLED IN THE FUTURE, BOOSTER PUM MONITORING AND CONTROLS TO BE CAPABLE OF TRANSMITTING FLOW AND WARNING DATA EXTERNALLY VIA COMMUNICATION CABLE.

1 BACKFLOW PREVENTER/BOOSTER PUMP ASSEMBLY

N.T.S.

FINAL CONSTRUCTION

Revisions	Date

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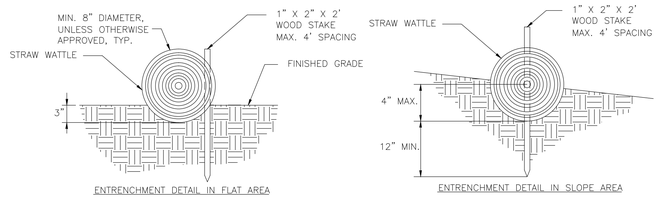
Drawing Title	IRRIGATION DETAILS
Approved: Project Director	
Project Title	CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY
Location	CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS
Date	01/28/2014
Checked	RWB
Drawn	JDL/JHK
Project Number	806CM3024
Building Number	
Drawing Number	I1.11
Dwg. 11 of 15	

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

Department of Veterans Affairs

VA FORM 08-6231



TYP. STRAW WATTLE INSTALLATION

1) FOLLOW MFR'S RECOMMENDATIONS FOR PLACEMENT OF STAKES (4' SPACING MIN. UNLESS OTHERWISE APPROVED)

2) ALL SOIL PILES SHALL BE SURROUNDED BY STAKED STRAW WATTLE.

3) REPAIR OR REPLACE SPLIT, TORN, UNRAVELING OR SLUMPING FIBER ROLLS.

4) INSPECT STRAW WATTLE ROLLS WHEN RAIN IS FORECAST, FOLLOWING RAIN EVENTS AND AT LEAST DAILY DURING PROLONGED RAINFALL. PERFORM REQUIRED MAINTENANCE.

5) IN MOST CASES, STRAW WATTLE ROLLS DO NOT REQUIRE REMOVAL AND CAN BE ABANDONED IN PLACE. IF NOT EXCESSIVELY SOILED, ROLLS MAY BE REMOVED, REPLACED AND REUSED.

1 STRAW WATTLE

N.T.S.

BEST MANAGEMENT PRACTICE	LOCATION	IMPLEMENTATION SCHEDULE	MAINTENANCE SCHEDULE
PRESERVING EXISTING VEGETATION	AROUND PERIMETER OF PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	EDUCATE EMPLOYEES AND SUBCONTRACTORS REGARDING IMPORTANCE OF MAINTAINING EXISTING VEGETATION TO PREVENT EROSION AND FILTER OUT SEDIMENT IN RUNOFF FROM DISTURBED AREAS ON THE CONSTRUCTION SITE. INSPECT SITE PERIMETER MONTHLY TO VERIFY THAT OUTSIDE VEGETATION IS NOT DISTURBED.
PROTECT GRADED AREAS AND SLOPES FROM WASHOUT AND EROSION.	THROUGHOUT PROJECT SITE.	DURING WET SEASON.	INSPECT GRADED AREAS AND SLOPES ON AT LEAST A MONTHLY BASIS TO CHECK FOR EROSION. REGRADE TRIBUTARY AREAS OR INSTALL STRAW BALE OR SAND BAG DIKES AS NECESSARY TO PREVENT EROSION.
GRAVEL FILTER	ALONG FLOW LINES OF UNPAVED ROADWAYS WITHIN SITE.	IN PLACE DURING WET SEASON UNTIL ON-SITE ROADWAYS ARE PAVED.	INSPECT AFTER EACH STORM. REMOVE SEDIMENT DEPOSITED BEHIND BERM OR BARRIER TO MAINTAIN EFFECTIVENESS.
INLET FILTERS	INLETS TO THE STORM DRAINAGE SYSTEM.	CONTINUOUS UNTIL LANDSCAPING IS IN PLACE.	INSPECT AFTER EACH STORM. REMOVE SEDIMENT DEPOSITED BEHIND BAGS & WATTLES WHENEVER NECESSARY TO MAINTAIN EFFECTIVENESS.
STRAW WATTLES	ALONG THE PERIMETER OF LARGE DISTURBED AREAS, AS DIRECTED BY CONSTRUCTION INSPECTOR	CONTINUOUS UNTIL LANDSCAPING IS IN PLACE.	
COVER CROP (EROSION CONTROL MIX)	2:1 SLOPES AND OVER DISTURBED AREAS OF SITE	IN PLACE DURING WET SEASON.	INSPECT SLOPES ON AT LEAST A MONTHLY BASIS TO CHECK FOR EROSION. IF EROSION IS NOTED, SPREAD STRAW MULCH OVER AFFECTED AREAS.
STABILIZED CONSTRUCTION SITE ACCESS	ENTRANCES TO SITE FROM PUBLIC AND CEMETERY ROADWAYS.	CONTINUOUS UNTIL ENTRANCES AND ON-SITE ROADWAYS ARE PAVED.	INSPECT AT THE BEGINNING OF WET SEASON AND ON AT LEAST A MONTHLY BASIS THEREAFTER. ADD AGGREGATE BASE MATERIAL WHENEVER NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED INTO PUBLIC STREET.
WIND EROSION CONTROL PRACTICES	WHEREVER NECESSARY THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL GRADING IS COMPLETED AND SOILS HAVE STABILIZED.	INSPECT SITE DURING WINDY CONDITIONS TO IDENTIFY AREAS WHERE WIND EROSION IS OCCURRING AND ABATE EROSION AS NECESSARY.
GOOD HOUSEKEEPING MEASURES	THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	INSPECT SITE ON AT LEAST A MONTHLY BASIS TO VERIFY GOOD HOUSEKEEPING PRACTICES ARE BEING IMPLEMENTED.
PROPER CONSTRUCTION MATERIAL STORAGE	THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	INSPECT SITE ON AT LEAST A MONTHLY BASIS TO VERIFY THAT CONSTRUCTION MATERIALS ARE STORED IN A MANNER WHICH COULD NOT CAUSE STORMWATER POLLUTION.
PROPER CONSTRUCTION WASTE STORAGE AND DISPOSAL.	THROUGHOUT PROJECT SITE.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	INSPECT SITE ON AT LEAST A WEEKLY BASIS TO ASSURE WASTE IS STORED PROPERLY AND DISPOSED OF AT LEGAL DISPOSAL SITE.
SPILL CLEANUP	MATERIAL HANDLING AREAS.	IMMEDIATELY AT TIME OF SPILL.	INSPECT MATERIAL HANDLING AREAS ON AT LEAST A MONTHLY BASIS TO VERIFY PROPER SPILL CLEANUP.
STREET AND STORM DRAINAGE FACILITY MAINTENANCE.	STREETS AND STORM DRAINAGE FACILITIES.	CONTINUOUS UNTIL CONSTRUCTION IS COMPLETED.	MAINTAIN STORM DRAINAGE FACILITIES AND PAVED STREETS CLEAR OF SEDIMENT, LOOSE DIRT, CLODS, AND DEBRIS.

DEFINITIONS:

PHASE OF GRADING:

INITIAL: WHEN CLEARING AND GRUBBING ACTIVITIES OCCUR.

ROUGH: WHEN CUT AND FILL ACTIVITIES OCCUR AND THE SITE IMPROVEMENTS ARE CONSTRUCTED INCLUDING UNDERGROUND PIPING, STREETS, SIDEWALKS, AND OTHER IMPROVEMENTS

FINAL: WHEN FINAL ELEVATIONS ARE SET, AND SITE IMPROVEMENTS ARE COMPLETED AND READY FOR OWNER ACCEPTANCE.

2 BEST MANAGEMENT PRACTICES

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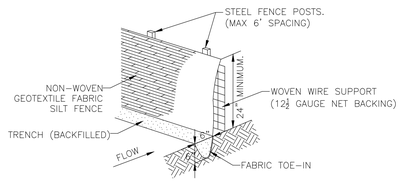


NOTES:

1) STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.

2) THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.

3) THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4) SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.

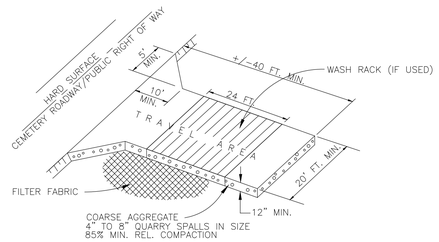
5) INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6) SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7) ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

3 SILT FENCE

N.T.S.

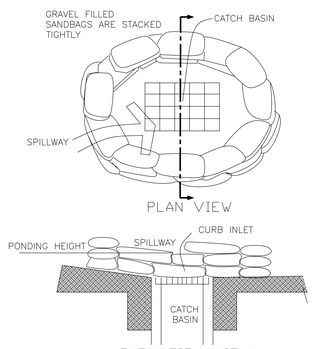


NOTE:

1. LOCATION AND LENGTH OF CONSTRUCTION ACCESS DRIVE ON SHEET I1.2
2. INSPECT MONTHLY AND AFTER EACH RAINFALL. GRAVEL MATERIAL SHOULD BE REPLACED WHEN SURFACE VOIDS ARE INVISIBLE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHOULD BE REMOVED EVERY 24-HOURS. GRAVEL AND FILTER FABRIC TO BE REMOVED AT END OF CONSTRUCTION.

4 STABILIZED CONSTRUCTION ENTRANCE AND ACCESS DRIVE

N.T.S.



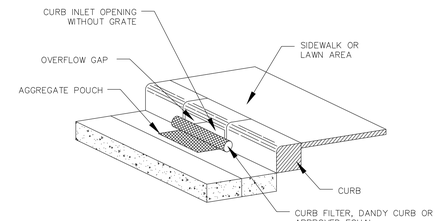
1) PLACE GRAVEL BAG SEDIMENT BARRIERS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.

2) SANDBAGS, OF EITHER BURLAP OR WOVEN GEOTEXTILE FABRIC, ARE FILLED WITH PEA GRAVEL, LAYERED AND PACKED TIGHTLY.

3) LEAVE ONE SANDBAG GAP TO PROVIDE A SPILLWAY FOR OVERFLOW.

4) INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

STORM DRAIN INLET FILTER



NOTE: FOR CATCH BASINS LOCATED IN PAVEMENT INSTALL FILTER FABRIC UNDER GRATE

CURB INLET FILTER

5 STORM DRAIN AND CURB INLET FILTER

N.T.S.

Revisions:	Date

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Drawing Title: EROSION AND SEDIMENT CONTROL DETAILS

Approved: Project Director

FINAL CONSTRUCTION

Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY

Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS

Date: 01/28/2014 | Checked: RWB | Drawn: JDL/JHK

Project Number: 806CM3024

Building Number:

Drawing Number: ESC1.1

Dwg. 12 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

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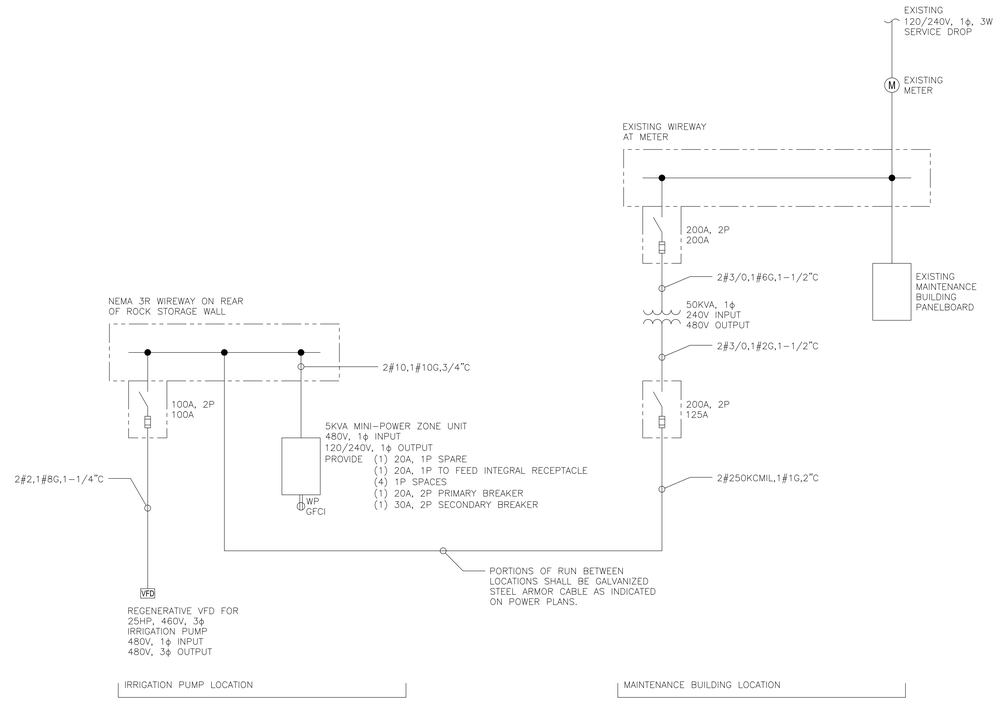
ELECTRICAL SYMBOLS

- FUSED DISCONNECT SWITCH
- VFD — VARIABLE FREQUENCY DRIVE
- CP — CONTROL PANEL
- T — TRANSFORMER (PLAN)
- TRANSFORMER (ONE LINE)
- SWITCH
- FUSE
- DUPLEX RECEPTACLE (GFCI = GROUND FAULT CIRCUIT INTERUPTER)
- M — METER
- E — CONDUIT RUN EXPOSED
- E — CONDUIT RUN UNDERGROUND

FINAL CONSTRUCTION



ONE-LINE DIAGRAM

NOT TO SCALE

FINAL CONSTRUCTION

Revisions	Date

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Drawing Title: ELECTRIC - SYMBOLS AND ONE-LINE

Approved: Project Director

Project Title: CAMP BUTLER NATIONAL CEMETERY IRRIGATE ENTIRE CEMETERY

Location: CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS

Date: 01/28/2014 | Checked: RBK | Drawn: CHN/SBW

Project Number: 806CM3024

Building Number:

Drawing Number: E1.1

Dwg. 13 of 15

NATIONAL CEMETERY ADMINISTRATION
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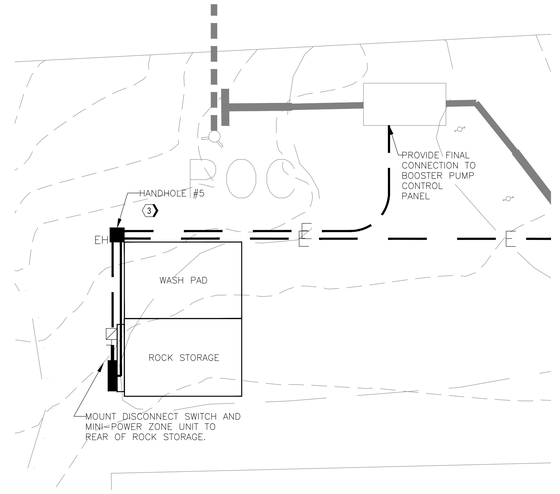
VA FORM 08-6231

ELECTRICAL SITE PLAN - NW QUADRANT

SCALE: 1" = 40'



ENLARGED PLAN

SCALE: 1" = 10'

SHEET KEYNOTES

1. GALVANIZED STEEL ARMOR CABLE PLACED 24 INCHES BELOW FINISHED GRADE IN SAME TRENCH AS IRRIGATION PIPE AT 30 INCHES BELOW GRADE AND CONTROL CABLE AT 18 INCHES BELOW GRADE.
2. SCHEDULE 40 PVC RUN BETWEEN HANDHOLES AND IN SAME DIRECT BORE AS IRRIGATION LINES.
3. HANDHOLES SHALL BE MONOLITHIC POLYMER CONCRETE APPROXIMATELY 21"L x 15"W x 15"H WITH HEAVY DUTY ELECTRIC LOGO COVER AND OPEN BOTTOM SET ON 6 INCHES OF GRAVEL. TOPS OF HANDHOLES SHALL BE FLUSH WITH FINISHED GRADE.

KEYMAP
N.T.S

NORTH

GRAPHIC SCALE: 1" = 40'

FINAL CONSTRUCTION

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Drawing Title	ELECTRICAL SITE PLAN NW QUADRANT
Approved: Project Director	
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Location	CAMP BUTLER NATIONAL CEMETERY SPRINGFIELD, ILLINOIS
Date	01/28/2014
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Dwg.	14 of 15

NATIONAL CEMETERY ADMINISTRATION DESIGN AND CONSTRUCTION SERVICE

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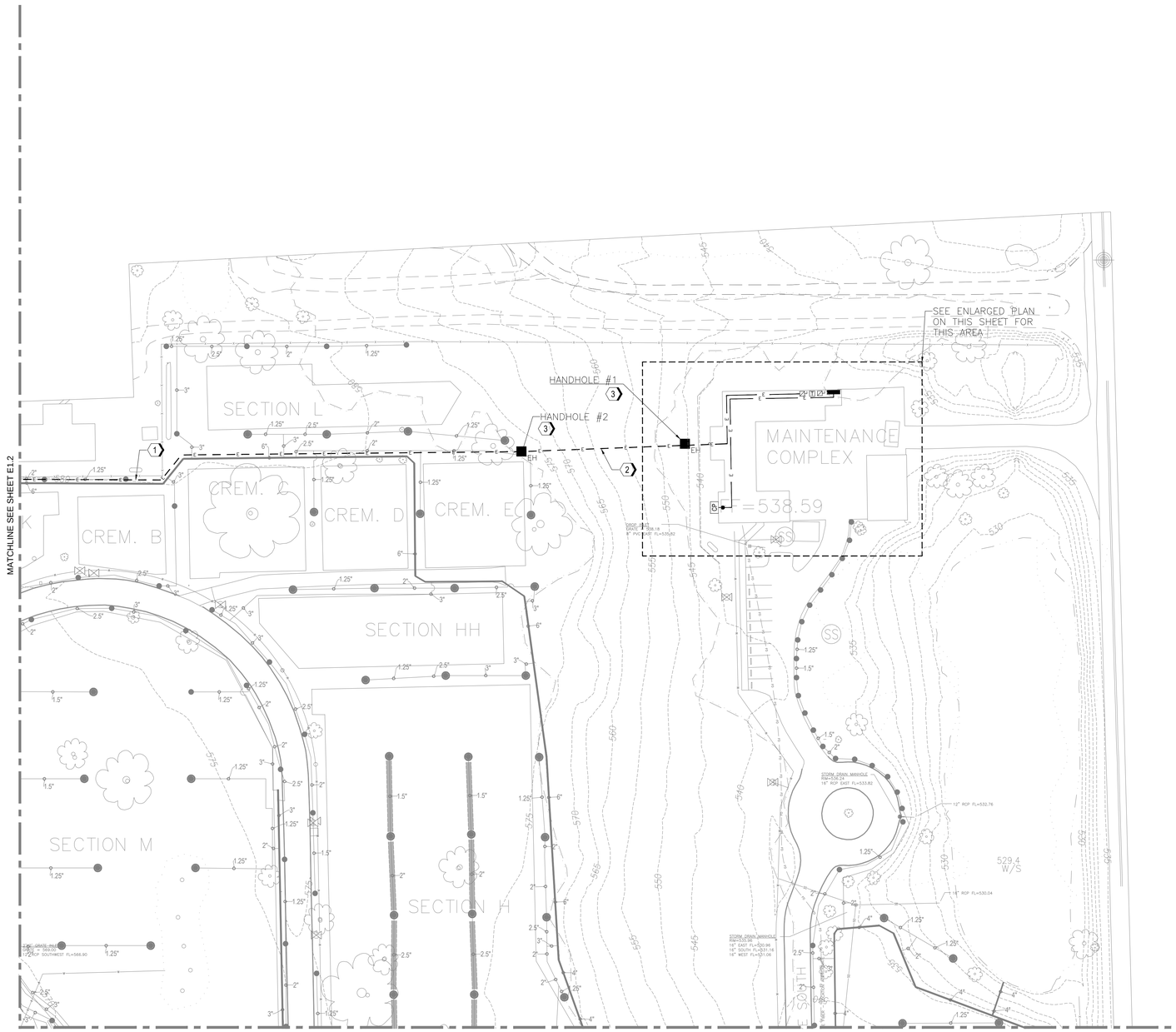
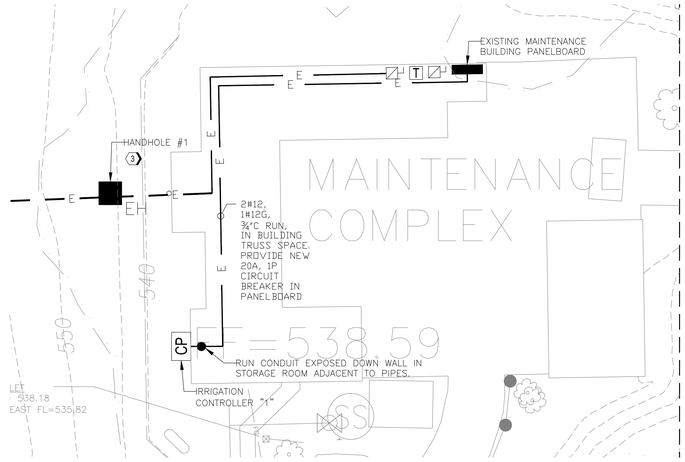


ELECTRICAL SITE PLAN - NE QUADRANT

SCALE: 1" = 40'

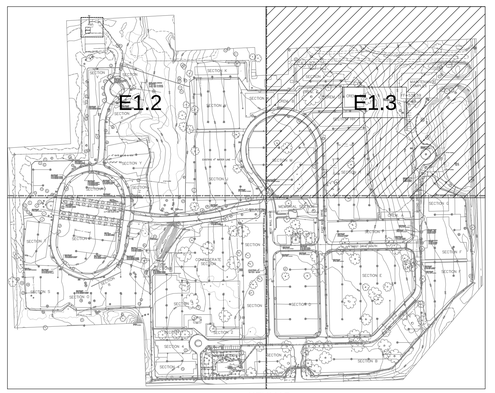


ENLARGED PLAN

SCALE: 1" = 20'

SHEET KEYNOTES

1. GALVANIZED STEEL ARMOR CABLE PLACED 24 INCHES BELOW FINISHED GRADE IN SAME TRENCH AS IRRIGATION PIPE AT 30 INCHES BELOW GRADE AND CONTROL CABLE AT 18 INCHES BELOW GRADE.
2. SCHEDULE 40 PVC RUN BETWEEN HANDHOLES AND IN SAME DIRECT BORE AS IRRIGATION LINES.
3. HANDHOLES SHALL BE MONOLITHIC POLYMER CONCRETE APPROXIMATELY 21"L x 15"W x 15"H WITH HEAVY DUTY ELECTRIC LOGO COVER AND OPEN BOTTOM SET ON 6 INCHES OF GRAVEL. TOPS OF HANDHOLES SHALL BE FLUSH WITH FINISHED GRADE.



KEYMAP
N.T.S

NORTH

0 80
40
GRAPHIC SCALE: 1" = 40'

FINAL CONSTRUCTION

Revisions:	Date

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Dwg. 15 of 15	

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Department of Veterans Affairs

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three quarters inch = one foot
one eighth inch = one foot
one quarter inch = one foot
three eighths inch = one foot
one half inch = one foot
one and one half inches = one foot
three inches = one foot